


36
4
5

No. <u> </u>	Department of
21661	619 V6
LIBRARY OF Vol. 30	
Illinois Industrial University,	
CHAMPAIGN, ILL.	
Books are not to be taken from the Library Room. 20	

VETERINARY MEDICINE
LIBRARY





Digitized by the Internet Archive
in 2016 with funding from
University of Illinois Urbana-Champaign Alternates



THE

VETERINARIAN;

A

MONTHLY JOURNAL OF VETERINARY SCIENCE

FOR 1857.

VOL. XXX—VOL. III, FOURTH SERIES.

EDITED BY

PROFESSORS MORTON AND SIMONDS.

Ars Veterinaria post medicinam secunda est.—Vegetius.

LONDON:

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.

PUBLISHED BY LONGMAN, BROWN, GREEN, LONGMANS, AND ROBERTS,
PATERNOSTER ROW.



THE
VETERINARIAN.

VOL. XXX,
No. 349.

JANUARY, 1857.

Fourth Series,
No. 25.

Communications and Cases.

ON GLYCERINE.

WE are indebted to Chevreul for a knowledge of the constitution of fats; who showed them to be compounds of certain acids—the stearic, the margaric, and the oleic—in union with a base termed *glycerine*; which principle, according to some chemists, is an *oxide of glyceryle*, this last being a hydro-carbon; so that they may be designated salts of glycerine, or the stearate, margarate, and oleate of glycerine. Very generally these principles are called stearine (from *στεαρ suet*), margarine, (from *μαργαρον, a pearl*), and elaine (from *ελαιον, oil*). The difference in the consistence of fats depends upon the preponderance of one or other of these bodies; stearine or margarine prevailing in the more solid fats, and elaine in the more liquid ones.

This view, however, of the constitution of fats, must be accepted as merely hypothetical it appears, although there is much that will analogically bear it out. Berzelius considers them to be peculiar organic products, resolvable by alkalies and other salifiable bases into fatty acids and glycerine; this partly under catalytic influences, and partly as the result of affinity.

The composition of glycerine is $C_6H_7O_5$, HO. It was really first discovered by Scheele, and called by him the *sweet principle of oils* (*γλυκυσ, sweet*), but was more fully examined by Chevreul.

It may be obtained by boiling a mixture of finely pulverised oxide of lead, with olive oil, or any of the oils or fats, and water; which latter should be poured off and renewed from time to time, when an insoluble soap of lead will be

formed—*lead-plaster*,—and glycerine will be found to be retained by the water.

This aqueous solution is to be freed from any lead it contains by means of a stream of sulphuretted hydrogen passed through it; then digested with animal charcoal, and afterwards filtered and evaporated to the consistency of syrup by exposure in vacuo over oil of vitrol. As thus procured, it is not unfrequently still contaminated with a little lead, unless the greatest care be exercised.

But by far the larger amount of this principle is procured during the manufacture of soaps; the *theory* of the saponification of fats and oils being now rendered extremely simple, which is as follows: When oils or fats are boiled in a solution of soda or potassa, the stearic, margaric, and oleic acids leave the glycerine and combine with the soda or potassa, forming stearate, margarate, and oleate of soda or potash, as may be; the former constituting the harder soaps, the latter, soft soap; so that these again are true salts. The glycerine being thus left in combination with the water, which previously held the alkaline base, soda or potash, in solution, the liquor is to be rendered neutral by the addition of dilute sulphuric acid, then filtered and evaporated to a syrupy consistency, and from this the glycerine is to be extracted by alcohol and evaporation.

Glycerine, like most other newly discovered substances, at first, while it awakened some curiosity, was not turned to any useful account, and tons of it were thrown away yearly.

The following are some of the uses to which it has been of late applied; which are extracted from a paper read by Mr. G. F. Wilson, at the meeting of the British Association, held at Glasgow, in 1855:

“The first suggestion of a use for glycerine, of which we can trace dates is in the beginning of 1844, when Mr. Thomas De la Rue, being engaged on some experiments requiring the use of syrupy substances, procured some glycerine from Mr. Warrington, of Apothecaries’ Hall, some of which he applied to a burn and an irritation of the skin. The experience thus obtained of its properties of soothing and keeping moist, led to its introduction, through Mr. Startin, into the Hospital for Skin Diseases, where it soon came into extensive use.

“In 1846, Mr. Warrington took out a patent for the use of glycerine as an agent in preserving animal and vegetable substances, and tried many experiments on preserving meat. He informs me that part of a neck of mutton, preserved in glycerine for several months, when cooked by Soyer, was partaken of by a gentleman with great satisfaction.

“Mr. Warrington, I believe, first applied glycerine in mounting objects for the microscope, for which it has since proved so successful.

“In the *Lancet* of June, 1849, Mr. Thomas Wakley published the results of a year’s experience, in a long and very interesting paper on the use of

glycerine in diseases of the ear, giving a number of cases in which it had proved a cure for deafness. In the number of the 23rd of the same month, his results were confirmed by letters from Mr. Erasmus Wilson and Dr. Gardner, the latter of whom drew attention to the fact that glycerine should be free, not only from any trace of lead, but also as much as possible from water. His theory was, however, better than his practice; for the glycerine he speaks of using, sp. gr. 1.280, being above the density of anhydrous glycerine, must have been impure.

"Isolated applications of glycerine had thus been suggested; but M. Cap appears to have been the first to see its extraordinary value in a great variety of medicinal preparations. His very valuable and interesting papers were published in the *Journal de Pharmacie et de Chimie*, and translated into the *Chemist*. I shall give two short extracts from them.

"M. Cap, in his first paper (*Journal de Pharmacie et de Chimie*, February, 1854, *Chemist*, April, 1854), begins by attacking the process of purifying glycerine given in the French chemical books, and shows its defects. He then gives his own process, remarks upon the great value of glycerine in skin diseases, and after suggesting a number of valuable uses, proceeds as follows:

"Glycerine dissolves the vegetable acids, the deliquescent salts, the sulphates of potassa, soda, and copper, the nitrates of potassa and silver, the alkaline chlorides, potassa, soda, baryta, strontia, bromine, iodine, and even oxide of lead. It dissolves or suspends the vegetable alkaloids in the same manner as the aqueous liquids, and at the same time the resulting products may be used for the same purposes as though mixed with oil. Thus the salts of morphia dissolve in it completely, even cold, in all proportions. Sulphate of quinine, in the proportion of one-tenth, dissolves in it when hot, but when cold separates into clots, which, when triturated with the supernatant liquid, give it the consistence of a cerate very useful for frictions and embrocations. It is the same with the salts of brucine, strychnine, veratrine, and most preparations of the same order, which enables us to consider that we have now, if not medicinal oils with a vegetable alkaloid base, at least a series of new preparations which will fulfil a perfectly analogous use in therapeutics."

"M. Cap, in his second paper (*Chemist*, Oct. 1854), states that he employed glycerine of 28 Beaumé, or containing 88 per cent. of anhydrous glycerine, and speaks of it as a solvent of sulphuret of potassium, and sulphuret of lime, of iodine, iodide of sulphur, iodide of potassium, iodide of mercury, of some chlorides, and of quinine, and sulphate of quinine.

"In the *Chemist* of February, 1855, Dr. Craweour, of New Orleans, states that for twelve months past he had been in the habit of using glycerine very extensively in those cases requiring cod-liver oil, in which the nauseous taste of the latter medicine rendered its exhibition impossible, and that now, in his practice, it had entirely superseded cod-liver oil.

"In a paper read at the meeting of the Royal Institution of the 30th of March, 1855, by the Rev. John Barlow, F.R.S., attention was again drawn to the great preservative power of glycerine upon meat. On this occasion Mr. Barlow showed specimens of flesh which had been immersed, some partially and some wholly, in glycerine, for more than a month. I can answer for the flesh having appeared to be perfectly fresh."

Mr. Wilson then proceeds to contrast the method resorted to by M. Cap, to obtain pure glycerine, with that proposed and adopted by himself. As this, however, would not interest the practitioner of veterinary medicine, it is omitted.

"I have now to mention some uses for glycerine, which I believe to be new, or to which I have seen distilled glycerine applied.

"A possible use, which appears worthy of experiment, is to inject it into the bladder for the purpose of dissolving calculous deposits; from its blandness it would not cause irritation, while, as it is a solvent of urea and phosphate of lime, it might dissolve them when in the bladder. Some of the high authorities have received glycerine for the purpose of the experiment.

"The use of glycerine in photography having been suggested, some distilled glycerine has been sent to several of the best photographers and makers of photographic preparations. It was very well received, and considered to promise well, and is still the subject of many experiments; but as yet it does not appear that any great results have been arrived at. It is, however, expected to supersede the honey of Shadbolt's process.

"The properties of soothing and keeping moist the skin have caused it to be used upon chapped hands and sun-burnt faces. It has been proposed as a substitute for syrup in preserving fruits. Mixed with alcohol or pyroxylic spirit, it has been proposed by Mr. Warren de la Rue as an economical fuel for spirit lamps.

"For some time past, in Edinburgh as in London, it has been used in skin diseases; it is now being tried in some cases of disease of the mucous membrane of the stomach.

"We have been informed that in the preparation of several medicines glycerine may be substituted for syrup or sugar, with the effect not only of preserving the medicine in an active state and free from change, but also of very greatly improving its taste. Griffiths' iron mixture has been mentioned to us as an instance of this.

"Glycerine appears to give the means of preservation of some objects of natural history without change in their colour. This is shown by the specimens of fish upon the table. Our first experiment was upon a brilliantly coloured two pound trout, caught in one of the Perthshire lochs. Immediately on taking it from the water, I poured a quantity of glycerine over it, and wrapped it in a cloth. At night the fish was cleaned and immersed in glycerine. Next day it was again wrapped in a saturated cloth. On examining it a day or two afterwards in Edinburgh, the colour on the scales was unchanged. When it arrived in London part was steeped in water and then cooked. Though perfectly fresh and firm, it had lost almost all its flavour; the uncooked portion was immersed in glycerine, and sent to Professor Owen, who suggested that the brilliantly tinted fishes of the Coral Islands and tropical coasts might be brought home in kegs of glycerine.

"On the table are specimens of trout, roach, and perch, which have been, the trout more than two months, the perch and roach more than one month, in their bottles. It will be seen that the colours continue bright.

"I may now state, in conclusion, that though a variety of uses, actual and possible, for pure glycerine have been mentioned, yet when we consider its power as a solvent, and at the same time its blandness, and freedom from all irritant, exciting, acid, and fermenting properties, we must feel that not a tithe of its uses have yet been developed; that in glycerine there is a wide field open, requiring many scientific and practical labourers, and which, once fully worked, will yield a tenfold crop of uses. Pure glycerine will then take its proper place among the most valued of modern products; and, produced, as it will be, in great quantities, it will be recognised in the arts, as well as in medicine, as a new, real blessing to mankind."

As a preservative agent, Dr. W. Frazer doubts its efficacy,

since he says it has failed completely in some experiments undertaken by him. He adds:

"It certainly preserves colours admirably, and has some remarkable effects in preventing the usual odour of putrefaction, but some substances which I placed in it have become *completely softened down* and destroyed. The exact changes it produces are well worth an extended research, but would occupy more time than I can command at present. Still, from its very striking effects of preserving colour and preventing putrefactive changes, especially the development of odour, at least for a time, it is likely to prove of great value where pathological or natural history preparations are required to be kept for a short period, either for more complete examination, or for obtaining drawings of them. For microscopic preparations I have found it to answer very well when the specimens are suitably selected. I subjoin M. Cap's tests of the purity of this fluid:

"1st. It should have no appreciable odour if a drop is rubbed on the hand.

"2d. Its consistence should be that of thick syrup, not absolutely colourless, but of a slight amber hue.

"3d. One volume should dissolve completely in one volume of alcohol acidulated with one per cent. of sulphuric acid, without giving any appreciable deposit, even after twelve hours (the deposit would be caused by lime).

"4th. Diluted and boiled with liquor potassæ, it should not be altered in colour, showing the absence of glucose.

The utility of this agent, more especially in veterinary practice, only remains now to be spoken of; although the observant practitioner will avail himself of the knowledge derived from its employment by members of the sister profession, he knowing that what is often applicable for the higher and nobler animal, man, is equally so for the lower animals which come under his more immediate care and notice. Its efficacy when applied to wounds or putrid ulcers, as a traumatic, depends greatly on its antiseptic properties, besides which it is a gentle stimulant; as it does not dry quickly, the lesion is kept moist, and the access of atmospheric air necessarily prevented. It likewise retards the drying of poultices. It may not possess any very great advantage over oils in this respect, except that it readily combines with the materials usually employed; but should these agents be applied to wounds, then we must not lose sight of the corrective properties already alluded to.

In scalds and burns its soothing influence is great, and it keeps the skin supple. Horn retains its pliability for a long time if smeared with it, and therefore in some foot cases, in which brittleness of the hoof exists, its use would be attended with benefit.

Dr. Richter, of Vienna, advocates the use of a solution consisting of one part iodide of potassium dissolved in two

parts glycerine, and to which one part of iodine is to be added, as an application in several skin and other affections. He says its efficacy is remarkable in non-vascular gôitre, scrofulous ulcers, syphilitic ulcerated surfaces, and lupus. It also acts as a caustic.

This solution has the advantage over alcoholic ones of not drying, therefore the absorption of the iodine continues for a long time. To use it, it must be spread over the diseased parts, and covered with thin gutta percha, to prevent the evaporation of the iodine. This is to be left untouched for twenty-four hours, and the degree of action induced, regulates its further application, or otherwise. Diseased surfaces by its action become paler than before, the surrounding skin being browned. On ulcers no trace of iodine will be found two hours after its application.

With considerable success glycerine has been given to the horse in cases of emaciation and debility instead of cod-liver oil; having over it this considerable advantage, the animal will partake of it freely in his water, provided it be tolerably pure.

As the purer the article the more expensive it is, so some may on this account raise an objection to its use in veterinary practice; but only let there be a demand for it, and we doubt not that effective and facile means will be quickly adopted so as to render it sufficiently pure for all the required purposes of the veterinary surgeon, and that too at a moderate cost; indeed, we incline to the opinion that this has been already done by Messrs. Price and Co.

Dr. Lindsay states, in an article entitled ‘Experimental Notes on Glycerine,’ published in the ‘Edinburgh Medical Journal,’ that with a view to—

“The discovery of the existence and extent of the fattening effects of glycerine on the animal body—if such there be—I have recently experimented on various of the lower animals, such as fowls, rabbits, and mice, mixing glycerine with their ordinary food. At the same time, I have made comparative or contrastive experiments on the same animals with cod-liver oil, and with common food. For instance, a cock of a cross Cochin-China breed, was fed on bread-refuse, etc., steeped in glycerine (Price’s pure concentrated), and a hen of the same kind, on similar food, soaked in cod-liver oil. During the first fortnight of the experiment, the former gained fourteen, while the latter only gained seven ounces.

“The following table will illustrate concisely the comparative increase of weight under ordinary food alone, and in conjunction with glycerine or cod-liver oil. The animals were weighed at intervals of about a fortnight, and were similarly placed in regard to confinement, etc.:

Nature of Food.	Animals.	Fortnightly weighings.				
		1st.	2d.	3d.	4th.	5th.
<i>Glycerine</i> Mixed with daily food,	No. 1. Cock .	3	3 14	3 11	4 8	5 8
	2. Hen .	—	3 8	3 12	3 15	4 4
	3. } Rabbits	—	2 15	3 1	3 8	4
	4. }	—	2 8	2 11	3 4	3 8
<i>Cod-liver oil</i> Mixed with daily food,	5. Cock .	—	3 15	4 8	4 4	4 1
	6. Hen .	2 12	3 3	3 9	4 4	4 2
Ordinary food alone,	7. } Rabbits	—	2	2 8	2 13	
	8. }	—	1 12	1 15	—	—

“The glycerine was greedily licked up by all the animals, which bore every appearance of thriving vigorously under its use. In such experiments, however, it is necessary to bear in mind, or deduct from the results, the influence of confinement or deficient exercise, and of over-feeding, in fattening animals. All the animals under experiment were confined in caged, but roomy, apartments of different kinds, so as to avoid other sources of fallacy. I would suggest the propriety of instituting similar experiments on a larger scale, for the purpose of setting at rest the question, or solving the problem—whether glycerine is really possessed of fattening or nutrient properties; and, if so, to what extent these are available in medicine.”

It may be advantageously employed for forming powders into masses instead of honey or mucilage; and here, perhaps, the purest is not called for. Particularly will it be found that when the aloetic mass is made with it its consistence will be longer retained, and a less quantity will suffice than is usually added of other substances. The ordinary purging mass may be readily formed by melting together in the water bath, any quantity of Barbadoes aloes with one-sixth its weight of glycerine, and simply stirring them together, so as to effect their incorporation. Or, should it be, as is preferred by some practitioners, that a carminative be conjoined, then one-fourth the weight of glycerine will be found necessary. A form of this kind may be adopted.

Take of Barbadoes Aloes, 4 parts;
Glycerine, 1 part, melt together,
then add Powdered Ginger, $\frac{1}{2}$ part, and intimately mix.

Enough, we think, has been advanced to warrant the assertion that should the therapeutical properties of this agent be established, it will become a valuable addition to the *materia medica* of the veterinary surgeon.

PROPOSAL TO FORM A VETERINARY PROTECTION SOCIETY.

By G. W. VARNELL, Esq., Assistant-Professor, Royal
Veterinary College.

To the Editors of the 'Veterinarian.'

DEAR SIRS,—I should be glad to ascertain, through the medium of your valuable Journal, what are your opinions, and also those of the members of the profession, as to the desirability of establishing an institution to be designated "The Veterinary Protection Society."

The principal object thereof would be, to raise a fund to defend an action at law brought against a graduated member of the Society on account of an accident occurring in the practice of his profession, or an injury inflicted on a patient while under treatment; the case being always, in detail, laid before a committee appointed for the especial purpose before its defence is determined upon.

I am, yours, &c.

A CALCULUS CAUSING RUPTURE OF THE RECTUM OF A HORSE.

By R. HAWES, M.R.C.V.S., London.

ON Friday, Nov. 14th, about half-past eight, a.m., I was requested to attend a horse immediately. I reached the stable about nine o'clock, and found my patient, an aged grey gelding of the coach-horse breed, standing in the centre of his stall with drooping head and eyelids. The first indication of pain given by the animal in my presence, was by the head being turned round to the off-side, and the muzzle pressed against the flank. This peculiar movement was repeated on the near side immediately afterwards, and continued at intervals till death occurred.

The ears, surface of the body, and legs were cold; the schneiderian membrane of its natural pink hue; the conjunctival, slightly injected; the pulse imperceptible at the angle of the jaw, and continued so throughout the progress of the attack; and no fæces had been voided since the stall had

been relittered on the removal of the excrement in the earlier part of the morning.

The horse was used in a light town cart, and I was assured by the carman that the animal had drank a pailful of water, and ate all his feed, given at seven o'clock. He had, indeed, always been a voracious feeder. On passing my hand up the rectum I was unable to reach any fæces. (Perhaps I ought to note distinctly that I passed my hand up only as far as the wrist.) I was informed that the horse had made two or three attempts to stale, but only a small quantity of urine was voided at each time. Since as yet there had not been any violent paroxysm, I looked upon it as a case of intestinal obstruction, and administered a dose of chloride of mercury, combined with an antispasmodic, and requested that if there were no amendment visible in the course of half an hour, the horse might be led to my stable, a distance of a quarter of a mile, thinking that the walk might prove beneficial to him rather than otherwise. About ten o'clock the animal was brought, and was in much the same state as when I first saw him. No fæces had been passed, and he had lain down but once since the ball was given, and that for a few minutes only. He did not roll, and when he rose up he was brought directly to me. The symptoms before enumerated continuing the same, the state of the pulse attracted most of my attention. I gave as a draught a diffusible stimulant with a diaphoretic, consisting of

Spts. Æth. Nit.

Liq. Ammon. Acet. āā žüss.

Ordered him to be quietly led home again, and warmly clothed immediately on his arrival there.

On visiting my patient about an hour after this, I found him standing in the same position as when I first saw him; the surface of the body quite warm, the legs and ears warmer; still pulseless at the jaw, and the heart beating very feebly. The most marked symptom now was a peculiar motion of the lower jaw and tongue, which was accompanied with a strange sucking kind of sound, caused by the movements of the tongue. The lower jaw was drawn sideways to the off-side, and spasmodically retained in that position for a short time; the mouth being open, the tongue was seen in constant motion, rubbing against the inner surface of the molars, thus causing the sound before mentioned. Occasionally it was protruded on the near side, and after a short interval, the lower jaw was drawn to the same side of the head, and this alternate action repeated. There was no pawing, nor any desire manifested to lie down.

At this time, as I was standing watching the case, the wife of the owner of the horse came to me and asked my opinion, the owner himself being out of town. I replied that I thought the case nearly a hopeless one, if not quite. Under those circumstances, then, she said she was determined to compound for him a dose of brandy and salt. I advised her to defer it for a little while, but unsuccessfully. The dose was immediately made, and given by the men in my presence. I being asked to superintend, of course I could not refuse a lady; but left the stable immediately after it was swallowed, hinting, as politely as I could, that perhaps they would send for me when it was deemed my services were again required.

I heard nothing more of the case until about five, p.m., when I was again sent for in a great hurry. On my arrival, I found my patient still standing, nor had he lain down during the last four hours. The surface of the body was bathed in a profuse perspiration; still no pulse was to be felt at the jaw; the conjunctival and Schneiderian membranes were about their natural colour, the ears, extremities, nose, and skin covering the frontal bones cold, and no more fæces had been voided. I administered another ball, the same as before. Soon after this a profuse secretion of saliva took place; in fact, the horse foamed at the mouth, as it is termed, and the spasmodic action of the lower jaw ceased. The tongue and buccal membrane were now observed to be blanched, and the belly became tympanitic.

I threw up an enema of warm water, but it was ejected perfectly uncoloured, either by blood or fæces. From this time till twelve p.m., clysters only were occasionally exhibited; but they were always returned unaltered. The surface of the body and the legs were kept warmly clothed. The only peculiarity now noticed, besides the symptoms already described, was, that the horse backed against the wall and supported himself by pressing with his hocks and hind quarters against it, until just twelve o'clock, when on the man elevating the animal's head, with the intention of giving him a little gruel, he dropped down, then rose again, and falling to the ground once more, died almost without a struggle. At no period did the symptoms warrant the abstraction of blood; in fact, at one time, from the pallidness of the membranes, I was inclined to the opinion that hemorrhage was taking place from the liver. The morbid parts I have forwarded to the College for your inspection.

I am, Sirs.

[The rupture of the rectum evidently owed its existence to

the presence of the calculus. It was about eight inches long, and peculiar for the great extent of the separation of the peritoneum from one side of the mesentery; which would indicate that the coats of the intestine first gave way at their attached edge, and between the layers of the peritoneum. Had this anything to do with the protracted nature and peculiarity of the symptoms? The stomach was also ruptured, but we incline to the opinion that this occurred in the act of dying. Its digestive function being, at the outset of the animal's illness, arrested, there would necessarily be an accumulation of the ingesta in it, which would take on the fermentative action, and cause over-distension.

The calculus was of the kind denominated "mixed;" consisting of the hairs of the oat and the ammonio-magnesian phosphate. It was very irregular in its form, its surface noduled, and weighed 12 oz. troy.]

CASES FROM MY NOTE BOOK.

By H. W. DYER, M.R.C.V.S., Waterford.

GASTRO-CEREBRAL CONGESTION IN SHEEP.

A FEW months ago, my attention was called to some sheep in the county Kilkenny, said to be diseased. The flock numbered about 300, and five or six of them had died rather unaccountably and suddenly. I examined them carefully, and not being able to detect any abnormal symptoms, advised that the next sheep attacked should be forwarded to me immediately. In a few days, another was similarly attacked; namely, with giddiness, accompanied with blindness and loss of appetite. At least, these were the only symptoms I could learn, as before the arrival of the animal, only a distance of three miles, it died in the cart which conveyed it. I proceeded to examine the carcase, and the result was as follows: The stomach and intestines much inflamed; the liver much darkened in colour, and easily broken down; the fourth division of the stomach contained a large quantity of sand, as did the small intestines also: the animal was very deficient in flesh. The only suggestion I could offer was, that the turnips upon which the sheep were being fed were in all probability the cause, and that they should be removed to other soil, and have other food allowed them. This advice was attended to, and not another case occurred. If I remember right, something of this kind happened in England a year or two since.

ULCERATION OF THE COMMON INTEGUMENT ACCOMPANIED WITH SLOUGHING OF THE FETLOCK-JOINT.

I was requested to look at a ewe, upon the same farm, a fortnight since, which was hopping about upon three legs. The shepherd told me, that she had warty growths upon her body and legs. I found, however, upon examination, that the warts, as he termed them, were pustules. One pustule had taken on such unhealthy action, that the fetlock-joint of the near fore-leg had become diseased, and the bones had fallen off. The stump, however, had healed, and all was apparently doing well; but, upon examination, I found the lungs to be very much disorganized. On account of this, coupled with the general appearance of the animal, I advised that it should be killed.

OPEN KNEE-JOINT.

On the 17th of September, a chestnut mare was brought into my yard with broken knees. I found the near knee-joint laid open, sufficiently large to bury a shilling in. After the usual repeated washings, so as to cleanse the wound, a cataplasm of Pulv. Lini was applied for a few hours. I then dressed it with Tinct. Ferri Sesquichloridi, sprinkling matico in powder over it. The joint remained open for three days, but by perseverance in the use of the above agents, I effectually closed the wound, and in one month after she travelled home, a distance of nine miles. From that time to the present she has worked well; the joint being as free as ever it was. So much for iron and matico!

ON SOUNDNESS.

By T. D. GREGORY, M.R.C.V.S., Bideford.

MY DEAR SIRS,—A most important subject was introduced in your periodical for November last, by Mr. Hawthorn, of Kettering, relative to the examination of horses by veterinary surgeons for soundness. I regret the discrepancies of opinion which exist with regard to some diseases, and have consoled myself with the hope that, with your aid, something might be done to reconcile those conflicting views. In the remarks made by Mr. Hawthorn I most heartily concur; and with your permission I will endeavour

to enlarge somewhat upon the subject. Many veterinary surgeons, after having been some years in practice, have thought it both proper and expedient to pass over in their examination of horses many slight ailments that are considered legally and technically to constitute unsoundness; from the fact of their having seen horses, which, perhaps, years before they have rejected as unsound, continue to do strong work without those ailments in any possible way deteriorating from their real value or usefulness. But while some have thought fit to relax on this point, there are others equally experienced who still go on regarding any departure, however slight, from perfect and normal structure to be unsoundness. They fear that should an animal be passed as sound by them it may be taken to another professional man and be rejected, thereby opening a door for disputes and litigation. I quite agree, therefore, with Mr. Hawthorn, that the whole matter should be revised by a number of experienced veterinary surgeons, and "in such a manner as to reduce the number of disputes which now make horse-causes a bye word and a disgrace to all parties." I hope by the quotation of the following cases to better illustrate the subject.

First. A horse is brought to me to be examined, I pass him sound with a *splint*. He is purchased by an inexperienced young gentleman and taken home. A few days after he is ridden to a meet of foxhounds. Of course, being a fresh one, he is scrutinized and pulled to pieces by the field, one of which, more knowing than the rest in horse matters, says, "A neat nag, very neat; but unsound I see." The young gentleman turns round quickly in his saddle. "Unsound! Nonsense. So-and-so passed him, and gave me a certificate of soundness," which certificate perhaps he pulls out of his waistcoat pocket. "I don't care," says the knowing one, "what So-and-so says; I say he has got a splint, and a horse with a splint is unsound." The young gentleman fidgets, and is uncomfortable. At that moment a fox breaks cover; the hounds rattle him away, and a good run finishes with a kill. The horse goes well, and for a time the splint is forgotten. But the next morning the owner goes to the stable, feels his horse's legs—still the splint—consults the groom who pulls a long face (perhaps he has not been "tipped"), and the consultation ends in the horse being sent to another veterinary surgeon to be examined, and he is pronounced to be unsound, he believing at the time he is right in what he has done. The horse is sent back to the seller; he refuses to receive him; an action at

law is brought ; the buyer may or may not get a verdict ; one thing is certain, a great deal of money is spent ; the two professional gentlemen figure in court ; not very creditably in the eyes of the public ; and the horse remains sound to the end of the chapter.

The second case I will select is a corn case ; very similar to Mr. Hawthorn's. A horse was sold for fifty guineas, by a most respectable yeoman, a client of mine, to a gentleman, and by him taken home and ridden, quite sound and much to his satisfaction, for about a week, when he required shoeing. For this purpose he was taken to the forge of an eminent veterinary surgeon in this county, whose smith, in preparing the horse's fore feet, discovered slight corns. He told his master, and his master told the new purchaser that he considered him unsound, and recommended him to write to my friend. He did so, and inclosed a certificate to that effect. Some correspondence took place, which resulted in the matter being referred to us two veterinary surgeons. We met. The horse was examined, and it is true he had a slight corn in each fore foot ; unquestionably brought about by neglected country shoeing. His feet were capitally shaped, and he trotted on the stones quite free from any lameness or tenderness whatever. We talked the case over, but could not agree as to the liability of my client taking back. I considered the ailment so slight that it would not be at all likely to interfere with him, and he contended that the horse was legally speaking unsound ; but at the same time admitting, in all probability that in two or three shoeings the corns might be got rid of. We could come to no arrangement. Our employers, therefore, took the matter out of our hands, and settled it between themselves, like sensible men. The horse was kept at, I believe, the original price, and the expenses of an eighty mile journey for myself was paid me between them. We veterinary surgeons parted good friends, but each adhered to his opinion, and believed himself correct.

A third instance : A chestnut thoroughbred mare was purchased by a noble lord, of a friend of his, a baronet ; both these officers in the regiment of Yeomanry Cavalry to which I am attached. A few days after she was taken home, the stud groom discovered that the mare had a spavin. I was sent for to meet the gentlemen, and to give an opinion. I examined her, and true enough she had one of those enlargements called by dealers a "Jack," on, I think, the near hock. She ran perfectly sound, and with a considerable degree of freedom of action of the hocks. The baronet

assured me that he, as well as his daughter, had ridden her for some time, and she had never shown any symptom of stiffness or lameness. I recommended her being kept, and gave them my opinion that she would not be likely to go lame from the ailment. My advice was taken; the mare is still in the possession of the noble lord, going quite sound (being years since that she was bought), and is a most especial favorite of one of his sons. Had I not possessed the confidence of those gentlemen, and the mare had been sent to some other veterinary surgeon, there is little doubt but he would have rejected her, and much unpleasantness might have occurred.

Fourth case : A young bay horse was in dispute after purchase on account of enlargements in the spavin-places (but refused to be taken back on account of no warranty having been given), and was said to be unsound in consequence, by a respectable practitioner, although not a legalised veterinary surgeon. From some cause, about this time the horse fell off much in condition. It was said to be brought about from the pain he was suffering in his hocks, for which firing was recommended. My opinion was sought ; I saw him move, and he went quite sound without the least perceptible limp. I disapproved of the firing, as I considered it uncalled for, and it was not resorted to. He was kept, and soon regained his health and condition. Two years after, he was sent to a fair and sold, but was rejected, on examination, by a member of the College for unsound hocks. He was taken home again, worked on, and is now, as he always has been, perfectly free from lameness, and can do his twelve miles an hour with ease. The enlargements were congenital, as I well remember him from his birth.

Fifth instance : A horse was rejected by a country practitioner for an unsound eye. He was sent to me, when I examined him and found he had unnaturally enlarged corpora nigra, one of which was nearly as large as a tick-bean in one eye. I, however, passed him as sound ; and the eye has always remained the same, without causing shying. I once knew a member of the College reject a horse having this appearance in the eye.

I could go on, Messrs. Editors, multiplying cases until I filled the whole of your next month's number. I have known, and have seen horses rejected for slight string-halt ; also for thorough-pins, and other bursal enlargements, and many times for *old* curbs. But sufficient has been said for the present by Mr. Hawthorn and myself. I trust to call your attention, and that of the profession generally, to this subject. I do hope

it will not be lost sight of it. Let us see if a more organized plan cannot be adopted to further the end and object of veterinary jurisprudence.

Apologising for my long epistle, I beg to remain,
Yours very truly.

CASE OF NASAL GLEET.

By E. J. PARSONS, M.R.C.V.S., Tiverton.

HAVING lately had a case of nasal gleet under treatment, which appears to me to possess more than ordinary interest, from its troublesome nature, coupled with one or two untoward symptoms with which I had to contend, I am induced to send you the particulars thereof for publication.

My patient was a young, well-bred mare, 7 years old, the property of Mr. W. Chappen, of this place. She was in "horse dealer's condition," having done but little work from the time of her being broken. On my first being called to her, she had a short troublesome cough, and a tumefaction of the sub-maxillary glands, accompanied with a clotted, cream-coloured discharge from the off nostril, which had been perceived for about a month prior to my seeing her. I ordered a cough-mixture, inserted a rowel under the jaw, and blistered the throat. At the end of a fortnight the cough and febrile symptoms had disappeared, but the discharge from the nose increased daily. The mare was therefore sent to my stables for other treatment, which consisted in the administration morning and evening of Pulv. Gallæ, ʒss, besides injecting a tincture of the same up the nostril once a day.

This I persevered in for one month, with but very slight, if any improvement. The glands had become even more swollen, and the discharge continued, and was now very fetid.

I now determined on trying the sulphate of copper; accordingly I gave at first a medium dose twice daily, gradually increasing it to a very large one. I trephined the superior and inferior maxillary sinuses, well washed them out every morning with tepid water, following this up with an injection of the Sol. Cupri. This treatment, although persevered in for more than another month, effected but a small decrease in the discharge: its fetor certainly was lessened, but it had become exceedingly glutinous; the hay adhering with it

to the halter, rack, manger, and all round the lower part of the box.

At this stage of the disease I was aroused one morning, as early as two o'clock, by an unusual noise in the direction of the stables, and fearing that there was something wrong with one of the horses, I went down, and found my patient had fallen from exhaustion, and was bleeding profusely from the off nostril. This I immediately plugged with tow, bathed the head with cold water, and injected a solution of alum. In about a quarter of an hour afterwards she rose, ate a bran mash, and went on well till the afternoon of the same day, when the hemorrhage again returned, and about three quarts of blood were lost. This was, however, soon arrested by the same plan of treatment as before; and after keeping my patient's head bathed for a few days, I advised her being turned out in a paddock, where she had plenty of good hay and corn for about three weeks, when my friend, Mr. Drake, V. S., of Exeter, saw her, and recommended a gentle dose of physic and an injection of the chloride of soda, in the proportion of four ounces to a pint of water, morning and evening.

The mare was therefore again brought to my stables, and subjected to the last-mentioned treatment for some weeks, but as before without any success.

I at last had recourse to the following as an injection: four ounces of chloride of soda, mixing with it two ounces of compound tincture of myrrh, and throwing it up the nostril with great force, by means of a pint syringe, which I had the satisfaction to find entirely stopped the discharge in one week; and after a month's run in the field, the mare resumed her saddle-work, and has been in good health and spirits up to this time, with the exception of a slight cold, which has now quite passed off.

My opinion of the action of this mixture is, that the chlorinated soda excited a healthy action in the Schneiderian membrane, and the spirit of the tincture of myrrh becoming evaporated, the matter thereof was left on the membrane as a coating to the diseased vessels.

I am, &c.

ON THE USE OF IODINE IN FARCY.

By J. B. HALL, M.R.C.V.S., V.S. Royal Artillery.

ON the 19th of August last a black troop-horse, stationed at Northampton, was reported to me by the farrier as being lame and having a swelled leg. I examined it, and more than suspected it to be farcy. The animal was therefore placed in an infirmary box, away from the other horses, and allowed to remain there until some more decided symptoms presented themselves. I watched him carefully every day, and about the fifth day from the above date I perceived the lymphatic vessels on the inner side of the near hind leg to become swollen, after which the glands in their course rapidly enlarged, and pustules made their appearance about the eighth day from the date of admission. Many of these very soon burst, discharging a dirty yellow matter; those which did not were opened, their capsules being thin and almost ready to burst. Nitrate of silver was freely applied to all. Two days after its use, they assumed a healthier aspect, and presented the appearance of small ulcers, varying in size from that of a sixpence to a shilling. They were washed twice or thrice during the day with a solution of sulphate of copper, and the same agent, in doses of a drachm, was given twice a day with the corn, of which the horse had from the first his full allowance. The appetite was good, and the animal in fair condition, considering he had lately returned from the Crimea. About the 5th of September the inguinal glands began to enlarge to about the size of a hen's egg, resembling buboes. In a short time they burst, and discharged healthy-looking matter, it being white in colour and thick in consistence. Iodine was now given in conjunction with the sulphate of copper, in the form of the iodide of potassium, in drachm doses, twice a day. After this the buboes very soon healed up, and the leg rapidly decreased in size; but there still remained something like twenty ulcers all the way up the leg, both inside and out. These were sprinkled with the sulphate of copper in powder daily, and they very soon began to heal, and in one week from the administration of the combined agents I had not more than half the number to deal with; and these also showed a disposition to granulate and to heal; which they all did about the middle of the month of September, excepting one just above the coronet, which remained

for a week or ten days afterwards, and proved rather troublesome.

I find, generally speaking, that the inguinal glands suppurate, discharge their contents, and heal much quicker than the rest of the ulcers; and the lower down the ulcers are situated, the more difficult they are to deal with. This undoubtedly is accounted for by their being further from the centre of circulation.

The cure of farcy is common enough undoubtedly, and also easy, provided the animal's constitution be good, and proper attention paid. I send this case merely from recollecting that, during the time I was a student, you advocated the use of the di-iodide of copper in these cases; and from the above case improving so rapidly after the exhibition of the two agents in conjunction, I am compelled to consider iodine a valuable therapeutic in the treatment of this disease. The horse is doing duty with the battery at the present time, November 13th, having been discharged from the sick-stables about a month. I have examined him carefully since, but find not the slightest disposition in the leg to swell, or any other symptoms of the original disease present. During his probationary or convalescent stay in the infirmary, he was regularly exercised, and well groomed; both of which I consider essential in this affection, if the horse is not lame.

The deduction I draw from the cases of farcy that have come under my notice, and the success attending their treatment, is, that every case should be treated with a prospect of cure, provided the lungs are healthy and the horse will feed. I have a horse under treatment at the present time, but he is a foreigner, which very much diminishes my prospect of success; and his constitution is also much shaken by a campaign in the Crimea; but as long as his appetite remains good, and there is no indication of internal organic disease, I entertain a hope that eventually the case will turn out favorable. At any rate, I will send to you the particulars of it whichever way it may terminate. I may here be permitted to remark, that the accommodation in the out-stations of the army, as far as I can judge, is very good for the treatment of infectious diseases. The sick animal is immediately removed from the rest to a box at some distance, and which is white-washed, repainted, and repaired (if necessary) before it is occupied by another, so that the next occupant finds it as clean and sweet as if newly built.

DIVISION OF THE SACRO-ISCHIATIC LIGAMENT IN A CASE OF DIFFICULT PARTURITION IN A COW.

By F. J. B. JONES, Student R.V.C.

(*Illustrated with a plate.*)

SOME one has somewhere said, that every member of a profession is capable of contributing something to science, if he will only apply himself, and put into practice, as opportunity may offer, those principles with which he has become conversant, or the suggestions he may have received from others.

It was during the past session that the Assistant-Professor of the Royal Veterinary College, Mr. G. Varnell, in one of his lectures on the Anatomy of the Pelvis, suggested that in those cases of parturition where, from the smallness of the pelvic opening, and the large size of the fœtus, its birth was difficult, if not impossible, a division of the sacro-ischiatic ligament might be attempted. And while he doubted not of the success that would result from the operation, he at the same time threw it out rather as a *dernier ressort*, when the other ordinary obstetric measures had failed, than one to be frequently resorted to. Moreover, he said, it would be remembered that very few cases come under the notice of the veterinary surgeon, calling for the adoption of this plan; yet were there but one, this might become the means of saving the life of a valuable animal. Little did I at that time think it would have fallen to my good fortune to be the first person (as far as I know) to prove not only the feasibility of the operation, but also to witness its perfect success.

To Mr. Varnell I beg to offer my obligations, since to him unquestionably all the merit is due of this important operation; as to Franklin is justly due the honour of proving the identity of lightning and electricity, although the French philosophers had established the fact before he did; nevertheless, they only acted on his suggestions. Having been much gratified with this case, and the same feeling having been participated in by others to whom it has been related by me, I have thought that, if greater publicity were given to it, it might be accompanied with a corresponding degree of benefit to the

profession as a body. I therefore proceed to describe, as concisely as I am able, the particulars relative to it.

About the middle of last September, I was requested to attend a valuable cow, 5 years old, of the Hereford breed, the property of a farmer residing a few miles from Ludlow, that could not parturite. The messenger informed me that he was afraid something was wrong with her, as she had had two or three calves before, and hitherto calved without any assistance. It was also several hours since she first showed any symptoms of calving, and her body had become very much swollen. I immediately returned with him, and took such instruments as I thought might be required. I found the animal lying upon her side, the abdomen much distended, and the vital powers evidently greatly exhausted. I had her raised so as to enable me to make an examination *per vaginam*, when I found the calf dead, its legs protruding, and the head bent backwards upon its side—a most unfavorable position for extraction. I endeavoured to reach the ear or orbit, but was unable to do it. I, however, succeeded, after great difficulty, in placing a cord round the neck and both its fore legs, and with the aid of several persons made an effort to remove it; but, from the size and unnatural presentation of the foetus, coupled with the narrowness of the pelvic outlet, I was perfectly unable to do so. I then came to the conclusion that the only means of saving the life of the animal, was to resort to the above operation. From what the messenger had informed me respecting the size of the abdomen, I was induced to take with me a trocar, thinking I should find it useful to give exit to the gaseous eliminations. It, however, proved of far greater service to me in another way; for, in the absence of any other instrument to perform the operation I had determined on, and which is the subject of this paper, I introduced it between the ischio-rectal fascia and the sacro-ischiatic ligament, and then withdrew it, thus forming an opening, into which I passed a probe-pointed bistoury, and, having my other hand on the outside, I commenced dividing the ligament until I had quite severed it, which I could very easily ascertain by feeling the point of the bistoury under the skin. Very little hemorrhage supervened. I now attempted to remove the calf, which I found I had very little difficulty in doing. I then gave the cow a diffusible stimulant, consisting of

Sp. Ammon. Aromat., ʒiiss.,
in Aqua, Oj,

in order to remove the tympanitic condition of the

rumen; and in an hour afterwards exhibited the following draught:

℞ Sol. Aloes B.B., $\frac{3}{4}$ iv;
 Sp. Ether. Nit., $\frac{3}{4}$ j;
 Ol. Lini, Oiss. Misco.

I directed succulent diet to be allowed, and during the next few following days gave her a little tonic medicine. The small orifice I had made was cicatrized over on about the third day, and I had the satisfaction of seeing the animal perfectly recovered in far less time than I had expected.

I would not be thought to attach more importance to this one case than it really merits. The repetition of the operation may, perhaps, be again and again called for before its perfect safety is established. It may also be that others have resorted to it already, although they have not given publicity to the fact, as Mr. Varnell, I am informed, has long taught its practicability; and "Facile est inventis addere." There may be, moreover, objections to it that I am not acquainted with, since "every medal has its reverse." My object has been simply to make known an operation which, *in extreme cases*, appears to me likely to prove advantageous, by saving the life of a valuable animal, as well as its offspring. Further, it possibly might admit of adoption in the human subject; since surely it is not more formidable than the Cæsarian operation. Here, however, I speak with great diffidence, not being competent to contrast the two operations.

EXPLANATION OF PLATE.

- A. The last bone of the sacrum, to which that portion of the ligament intended to be divided is attached.
 - B. The sacro-ischiatic ligament. The dotted line indicates the place where the section is to be made, but which should be carried a little further than to where the dots extend.
 - C. That portion of the ischium to which the ligament is strongly attached.
- The artist has unfortunately made the sacro-sciatic ligament, as a whole, too formal. Two openings should also have been left; one anteriorly, for the passage of the gluteal vessels, and one behind the acetabulum, for the passage of the sacro-sciatic nerve, and the tendons of the obturator internus and pyroformis muscles.

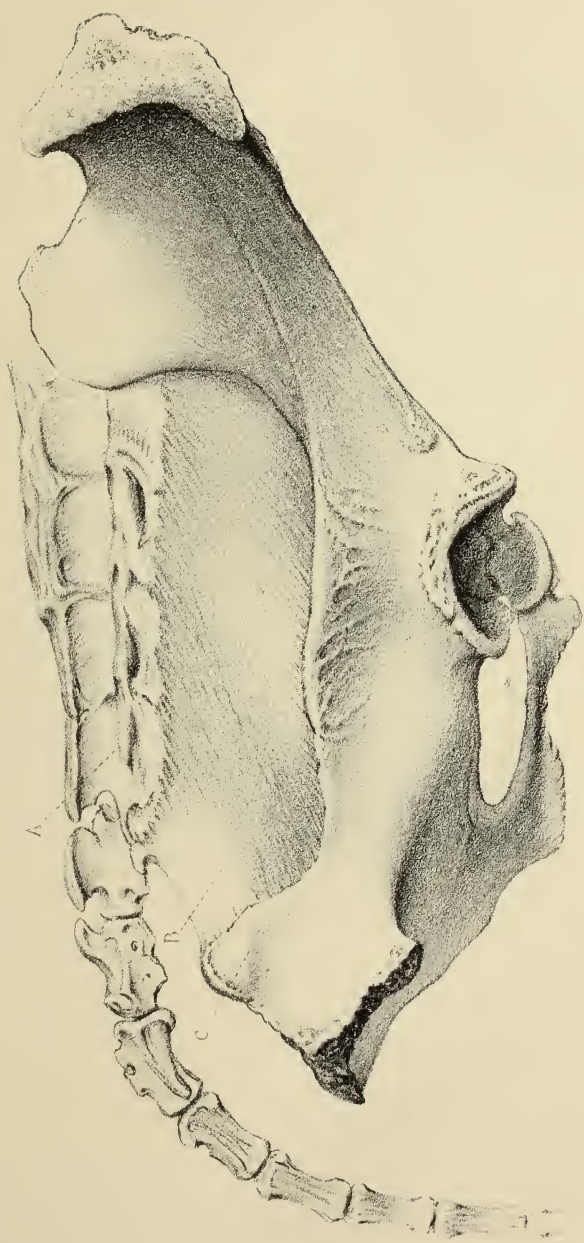


Fig. 1. Skull of *Protheriodon*.

— *Mon. & Jour.*

CASE OF DISLOCATION OF THE PATELLA OF A HORSE.

By C. PERCIVALL, Student of Veterinary Medicine.

THE case which I am about to record occurred the latter end of last August. To me, being a junior student in the profession, it presented an amount of interest which I have not found in the ordinary cases of lameness that have come under my notice. It was one of "Dislocation of the Patella," and the subject of it was a young and valuable horse of the cart-breed. The man left him to all appearance quite right the night previous, but on his coming to the stable in the morning found him very lame and scarcely able to move: He called in his blacksmith and farrier, who, attaching great importance to the case, suggested that Mr. Cartledge should be sent for. On our arrival, we found the horse standing with the near hind leg extended backwards as far as the muscles would allow, and on attempting to move him across the standing he fell. The plan adopted for the reduction of the dislocation somewhat resembles that of which my father speaks in the first volume of his 'Hippopathology.' A hobble was placed round the fetlock of the affected limb, with a rope attached to it. The rope was then brought between the fore legs, and fastened to the collar, which had been put on for the purpose, by which means the leg was pulled upwards and forwards, and kept in that position, while Mr. Cartledge employed pressure on the outside of the stifle, and thus the bone became replaced. After this an active blister was applied over the part, and a dose of physic administered. The hobble and rope were left on, to prevent the possibility of the limb being again projected backwards; and the animal was otherwise prevented from lying down. As he improved daily, the rope was gradually slackened so as to relax the part, and in the course of a short time, the effects of the blister having subsided, the horse had regained the natural use of the leg, and was put to gentle light work.

I am, Gentlemen,

Your obedient servant.

SHEFFIELD; Dec. 5, 1856.

ULCERATION AND RUPTURE OF THE ABOMASUM OF A COW.

By J. SIMNEL, Liverpool.

AT ten a.m., October 3d, 1856, I was called in to attend a heifer belonging to a gentleman of this town, which had, to all appearance, been in perfect health nearly up to the time of my being sent for. The symptoms present were, pulse imperceptible at the jaw, and scarcely to be felt at the heart; respiration accelerated; muzzle free from moisture, and a discharge of frothy saliva from the mouth; a cold perspiration covered the whole surface of the body, accompanied with considerable distension of the rumen; and the bowels were constipated. I gave aromatic spirits of ammonia, two ounces, in the form of a draught, and introduced a trocar into the rumen, which, to all appearance, relieved the animal. I left a draught containing sulphate of magnesia, to be given an hour afterwards, followed with plenty of gruel, and directed the body to be kept warmly clothed.

At six p.m. I was sent for again in great haste, the messenger stating that the cow was dying. When I arrived I found all the symptoms before described greatly aggravated, with these in addition, viz., a total state of insensibility, and a discharge of blood mixed with saliva from the mouth. I at once ordered her to be slaughtered, as no hope of cure could be entertained; but before the butcher arrived she expired.

Post-mortem appearances.—On opening the abdomen, a great quantity of blood was found existing within the cavity, which on examination I found to proceed from a rupture of the abomasum; the mucous lining membrane of which was very much inflamed, and in places ulcerated. There was also a considerable amount of inflammation in the mucous coat of the intestines. The brain was slightly congested.

CRIMEAN REMINISCENCES.—MODES OF SHOEING.—INJURIES TO THE BACK AND LOINS.—OPERATION UNDER CHLOROFORM.

By "POULAIN."

MESSRS. EDITORS,—Presuming on the practical excellence of your valuable Journal, I trust that, in the absence of more worthy matter, the insertion of a few remarks on Crimean practice will not be unacceptable to at least a few of your readers.

The treatment of the hoof, as illustrated in the various methods of shoeing which were adopted and practised during the contingency of the late war, was the first subject which, from the principles involved, engaged my attention; and may to some be an unnecessary revival of notions often discussed; but as they were novel to me, I doubt not profitable, ideas may start even from the ashes of facts remembered only as histories, when our art, in its infancy, struggled against theories unsupported by science, but which are now happily extinct, or at least their remains are entombed in the grave of oblivion, only to be brought to the surface by empirical resurrectionists.

The results of the various methods of preparing and shoeing the foot so strikingly exemplified the superiority of our own mode over every other, as to leave no doubt in my mind as to the merits of English shoeing and English farriers; desiderata which were only obtained at a late period of the working existence of the Land Transport Corps in the Crimea.

This want, which entailed such extra and arduous duty upon the veterinary surgeon, was at length supplied; and the results that followed were truly wonderful, lameness decreasing almost 80 per cent.

The Turkish mode of shoeing, at one time the most accessible, and really the most objectionable, it is not my intention to enter minutely into, but only briefly to point out the demerits and disadvantages, of which there was so much cause to complain.

The shoes, or plates, are of varied size and shape, according to the proportions and peculiarities of the foot to which they are to be applied; the principle of construction being in all cases the same, namely, a flat piece of iron, pear-shaped, heel turned upwards and backwards, effecting pressure on the frog and heels, the edges being serrated, ostensibly for giving security to the footing, and some have a central circular space

to admit of clearing the cavity between the shoe and foot from gravel, mud, stones, &c., which frequently accumulate therein. This shoe is attached by nails of pliable iron, shorter somewhat than English ones, running more abruptly to a point, and having projecting heads with alæ or wings, which, when driven, overlap each other. These attachments were practically very inefficient, as the constant casting of the shoes proved. The disadvantages of the shoe were only equalled by those in the preparation of the foot by the Turkish farriers. Another serious obstacle, so inimical to our ideas of that protection which should be afforded to the sensitive parts of the foot, is, that they cut the hoof down very close, not paring or excavating, but actually cutting away as much horn as is at all compatible with the application of a shoe; the frog being almost entirely removed, leaving only a slight covering of horn on the heels.

This cutting away of the foot they accomplish by means of their peculiarly shaped knives. The Turkish farrier of my battalion assured me he could, and had frequently seen half an inch in thickness of the hoof, with nails attaching the shoe, cut through from heel to toe at a single sweep of the knife.

To the curious it may be interesting to know the shape of these primeval paring instruments, of which I have seen three sizes, not materially differing in construction; the accompanying sketch may convey a better idea than description :



A, A. Cutting edges. A², A². Cutting edges also, but slightly gouge- (—) shaped.

With these knives in hand, they stand behind the foot on which they operate, which is elevated and firmly held *in situ* by an assistant, who, standing with his face towards the operator, and placing the knife, with its edge towards him, at the point from which he intends cutting, draws it towards himself, cutting in its progress that which he desires to remove. These their instruments they use with much dexterity, but without the results obtained by our English cutlery, which they much admired, and were anxious to gain possession of.

The disadvantages I experienced from this treatment were those resulting from enormous pressure, which rotted away

the frog ; the soles were underrun ; stones, dirt, &c., accumulated within the space between the shoe and the foot ; and all those consequences followed which result from the interposition of foreign substances in such situations. The horny parts also became more or less dissolved ; and to such an extent had this solution taken place, that it was absolutely necessary, in some instances, to remove the entire sole and frog, so that it was impossible to attach a shoe to the foot until the new growth of horn, which appeared beneath the decayed parts, had attained a sufficient amount of thickness.

The process of reparation, or new growth, in many cases was very rapid and complete ; seeming as if the great surface implicated averted the real ill-consequences so commonly attending injuries of the horny parts of the foot. When the horn, already separated, was detached and the foot cleansed, the laminæ and secreting villi were plainly discernible through the thin film of growing horn, which, in its growth, pushed off the decayed parts by a kind of desquamation. Numbers of animals were necessarily returned non-effective from this cause. Canker, quittor, and thrush also often occurred in the feet of animals subjected to this method of shoeing. Sanderack very rarely occurred, which was much too frequent in the feet of animals shod on the English system. This I accounted for in the following way : In Turkish shoeing the rasp has no place. Rasping the outer part of the crust gives a nice finish to the work of the farrier no doubt, but the evil of the system is not sufficiently thought of or understood, or else it would not be so commonly practised. Horn in a natural state is provided with a secreting power for the preservation of those qualities by which it is characterised ; its lightness, elasticity, and durability rendering it a most fitting protection for sensitive parts ; constituting it also a beautiful medium through which the concussion of progression may be diminished in its distribution to the extremities. Truly has it been said, "No foot, no horse !" If, then, its integrity is of such vital importance as regards the effective value of the horse, it surely becomes us to preserve it in a state as nearly to that of nature as is compatible with a state of domestication and usefulness. Rasping removes that almost imperceptible oleaginous secretion which bedews, as it were, the surface of the natural and healthy horn. This secretion is evidently for the purpose of preventing evaporation, carrying off water, &c., and, if removed, evil must follow.

In support of this opinion, one can adduce many instances of persons who are in the habit of scraping or rasping their finger nails : the nails thicken, contracting on the sen-

sitive parts beneath, and, occasionally splitting and cracking, present a very unpleasant appearance. My experience on this subject has given me great reason to deprecate this system of attempting to *improve* Nature, who will ever retaliate when her laws are opposed.

The Spaniards prepare the foot by means of sharp pincers, with which they nip away the wall all round, cutting through and removing any stubs that may have remained in the horn, finishing with the old buttress.

The French, Russian, Italian, and Spanish shoes differ so little in their general construction and application from those in use in our country, as not to require a separate consideration.

INJURIES TO THE BACK AND LOINS.

The greatest of all the evils we had to contend with in the treatment of so large a number of animals in constant and varied work, was that of injury to the back and loins. The cause of this should first be considered. It was most frequently owing to continued pressure and repeated injuries arising from an irregular tilting, backwards and forwards, of the pack, or other saddle, immediately upon the body; the ordinary pack-saddle being, from its faulty construction, when in use for any lengthened period, certain to entail these consequences, which are materially increased by insecure fastening and badly fitting pads, unequal loading, &c.

As the transport of an army under some circumstances—for instance, in the Crimea, during the rainy season—can only be accomplished by this most objectionable of all methods, I would suggest the necessity of adopting some contrivance which would obviate the movement of the saddle with its load directly upon the back of the animal sustaining it.

If a protecting pad were first of all firmly secured to the body, whereupon the pack-saddle, of lighter construction than the old one, might be permitted to exert its unavoidable movements, I am of opinion that this precaution would at least lessen the chances of injury. I am not so sanguine as to hope in its entire success; but careful securing, loading, and treatment at the end of the journey, would certainly diminish the fearful number of cases of this almost intractable malady.

On my arrival in the Crimea, being detached for duty at two battalions, I found upwards of 220 animals suffering from injuries of the withers and loins from the cause above named. 760 being the aggregate number of effective and non-effective horses in the two battalions, shows one third from this cause alone to be totally unavailable for service.

In very many of these cases the dorsal spines had become carious, having sinuses leading in every conceivable direction, with, in a few cases, such an accumulation of pus, as that when the abscesses were punctured, the poor brutes sank fainting to the ground. Such extensive suppurations could not but be attended with great weakness and prostration of the vital powers, which the comforts accessible to our patients but little mitigated; in fact, the emaciation reached to such an extent, as to leave them in a condition not worth the expense of treatment. Five or six of the spinous processes of the dorsal vertebræ, protruding one and a half or two inches above the surface edges of a gaping wound, filled with a sanious, offensive fluid, gave evidence of the extensive disorganization of the contiguous parts. In animals of strong constitutions, such cases were to some degree manageable, by cleansing the wound entirely, removing the decayed parts, and injecting the sinuses with powerful stimulants, previously making dependent orifices and applying pressure, and adopting systemic measures. Notwithstanding our success in individual cases, the losses were necessarily enormous, from the great weakness which was nearly always associated with the malady.

OPERATION UNDER CHLOROFORM.

IN the spring of the present year (1856) I, in conjunction with V.S. Moir, of the Land Transport Corps, Crimea, whose case it was, operated on an entire Bulgarian pony, which had an extensive scirrhus tumour, of the malignant variety, in the region of the testicles, incorporating itself with those glands, also the penis, and contiguous cellular tissue. As the unfortunate animal was unable to perform even the most ordinary progression with ease, from the situation, size, and weight of the tumour, we determined on its extirpation by the knife; and, having chloroform in our possession, we thought it a good opportunity for experiment. All the requisite preliminaries being arranged, we had the animal cast, and commenced the administration of the anæsthetic agent as follows: We laid the animal's head on a piece of waterproof cloth so as to allow us to envelop one nostril, leaving the other perfectly free. A convenient quantity of tow, saturated in chloroform, was applied to one nostril, evaporation being prevented by the waterproof cloth surrounding it; and respiration was allowed to go on freely by the other nostril. Several saturations of the tow were requisite before any decided symptoms of the influence of the agent were manifested.

At first a little anxious excitement, with respiration diminished, both in frequency and power, was evinced, followed by a gradual relaxation of the muscular system, and a growing insensibility to touch, as also of the eye to light, with a slightly stertorous breathing; and our patient was in a state of anæsthesia. Here, of course, the administration ceased. Having proceeded to make an incision in the skin covering the tumour, our patient slightly quivered; another inhalation, however, soon again brought him under the influence of the chloroform, and the operation, which otherwise would have been exceedingly troublesome to perform, was resumed. The incisions were made so as to permit the preservation of the skin as much as possible, by dissecting out the tumour from its intimate association with it. This at first we feared we should not succeed in doing; but our precautions were rewarded by the result. Having turned back the flaps, and passed a seton through the tumour so as to elevate it, we proceeded with the dissection, tying the vessels as we came to them. We found, as is usual with tumours of this character, an artery and a vein at the bottom of it, in almost the central point of its attachment. Its removal was, therefore, unavoidably attended with considerable hemorrhage, from an infinity of small vessels too minute to tie. This bleeding was checked with cold water. It was with difficulty that the sheath was saved; and was accomplished by an arm being passed down it, and the dissection continued around it. The tumour being removed, the divided parts were brought together by means of sutures, having a deep hold; and a dependent orifice was left, so as to allow of the escape of the suppurative secretion, which was excited by means of stimulants, and a very favorable termination was obtained in a few weeks, by the animal's recovering so as to resume his duties with comfort to himself and advantage to the public service.

The tumour, when removed, we judged to weigh about seven pounds. At the conclusion of the operation, which occupied only eighteen minutes from casting to its termination, on the hobbles being removed, our patient lay as if still under restraint; and would probably have remained longer in this insensible state, for I had even turned him over after freeing him from the hobbles, had I not applied some spirit of ammonia to his nostrils. The effect of the stimulant was instantaneous, and he rose to his feet at once. The whole quantity of chloroform used did not exceed two ounces and a half.

I am of opinion—and I judge not from this case only—

that with a judicious supply of atmospheric air to the lungs, a *slow* administration of this valuable agent is to the horse, in the majority of cases, a perfectly safe mode of proceeding, and one to which the humane practitioner need not fear to resort in the performance of any painful and tedious operation. The confidence it gives to the operator, in his knowledge that he is not inflicting pain, stamps this as one of the most inestimable boons ever conferred on the animal kingdom.

The safety of its exhibition, in cases where it is really required, lies, in my opinion, in its slow administration at all times, keeping in view the necessity of a full supply of common air to the lungs, by allowing one nostril to be free.

My remarks as to its safety do not, of course, apply to cases where there is organic disease of the heart, air-passages, or vessels, which render its administration dangerous to life. Waiving all objectionable cases, of which the scientific practitioner will be the judge, I do think the value of this splendid discovery is lost sight of in the uneasy fears of popular prejudice.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

(Continued from vol. xxix, p. 708.)

7/ THE second volume of 'Lectures on Experimental Physiology,' by Claude Bernard, has been some time on our table, to be sifted and digested for the benefit of the readers of the Contemporary Progress. The task of analysing such a work is a pleasant one, as every page partakes of that peculiar freshness inseparable from the writings of those peculiarly successful in original research; who labour constantly in unfolding the truths of nature by exclusively consulting nature's own book; and whose pleasure it is to convey, in the clearest and happiest manner, all they have learnt to others that have not had the opportunity or the ability to follow in the same path of independent study and thought.

It is but a few months since the second volume of the 'Comparative Physiology of the Domestic Animals,' by M. Colin, of the Alfort School, appeared, and it is unsatis-

factory that we cannot engage in the publication of reviews of all such works. In the first part of M. Colin's book, much space is devoted to the subject of the digestive functions; in fact, as much as 258 closely printed pages of a full-sized octavo. Bernard's last course of lectures was devoted to the study of the functions of the various glands, the secretions of which are poured into the alimentary canal. I intend, therefore, to engage in an analysis of both the works of Bernard and Colin on the digestive functions.

Bernard's first lecture is devoted to the demonstration of the fact that physiology is an experimental science, or rather, as it would have been folly to engage in any lengthy discussion to prove anything so obvious and generally accepted, Bernard has simply pointed out the fallacy of drawing conclusions respecting the functions of organs by the study of their anatomy.

It would appear, as Bernard very wisely suggests, that inasmuch as we can deduce that the bladder and stomach are reservoirs because saccular, that arteries and veins are conduits for a fluid because tubular, that bones form levers from their character and distribution, the functions of all parts may likewise be learned. The inspection of the valves led to the discovery of the circulation, so that the more we study anatomy, the more shall we acquire physiological knowledge. Such is not always the case, as many examples will prove. To what have the dissections of the brain, the spleen, the thyroid, and supra-renal bodies, served? The fifth pair of nerves with many others has been dissected and described by celebrated anatomists, but such study has led to no result so far as the acquiring a knowledge of function is concerned.

Bernard shows in a happy manner that even in the first case where a saccular organ is supposed to act as a reservoir or a tube to carry fluid, it is only by a study of analogies that similar usages have been ascribed to it. It is in consequence of a knowledge of the use of peculiarly constructed objects that serve for daily purposes, that the function of similarly formed internal organs of the body have been determined. But this is not absolutely true with reference to the stomach and bladder, or with the blood-vessels, which he adduces as instances; inasmuch as the full stomach or bladder, or the blood-vessels, exposed with their contents, would sufficiently indicate that food, that urine were contained in the first two—in fact, that they acted as reservoirs; and that blood passed through the second. To my mind a more striking example of Bernard's

proposition is that furnished by the guttural pouches in the horse. A careful study of their structure and relations would never have enabled us to discover that they are destined to enclose air, and to act as resonant cavities. But as men know that sound is the result of aerial vibrations, and that bags of air in connection with a wind instrument increase the sounds produced, so is it inferred by analogy, that the guttural pouches perform a similar office.

To investigate organic constitution does not lead to the discovery of physiological properties, and, chemically speaking, the difference in the combining proportions of oxygen, hydrogen, carbon, and nitrogen in many tissues, does not account for physiological differences. Bernard has not seized on a good illustration of this fact, by comparing the study of elementary substances in animal chemistry to the study of the letters forming words used in the very different kinds of literature. A letter in writing holds a very different standing in the scale of importance, to an element in an organic compound, and, indeed, the fallacy of such an analogy is too glaring to merit more than an allusion.

Bernard very justly holds out *for experiment* as the basis of all physiological research, and demonstrates how anatomy serves for the explanation, *à posteriori*, of the phenomena discovered by physiological experiment. He speaks of the localisation of function; and demonstrates how one function necessitates the co-operation of many organs, and in the same way an organ serves for many purposes.

By the truly physiological method of investigation, as it has been termed by our learned author, the physiologist considers the living being in contact with the external medium, and studies the reciprocal influences resulting from their mutual action; and just as he meets with new phenomena he attempts to attribute them to organs and tissues in which they will henceforth be localised. Bernard shows how he discovered the formation of sugar in the liver by tracing the phenomena attendant on the disappearance of sugar from the organism. Again, with regard to the pancreas, it was by experimentally tracing the modifications of the fatty matters within the intestine, that he was led to attribute them to the influence of the pancreatic secretion.

A perfect knowledge of descriptive and topographic anatomy is essential for the proper performance of physiological experiments; and at the same time anatomy is of little use unless rendered subservient to physiological experiment.

If Bernard have so successfully combated the notion that

the study of physiology is but a series of inferences drawn from anatomy, how much easier is it to show that it is absurd to think that pathological investigations tend to enlighten us on questions of physiology. This is the rarest exception; and however loudly people may speak of physiological knowledge acquired by years of practical study of disease, the best proof that they have learned little is that they have produced little, and that they can claim no position amongst the cultivators of science.

Bernard, in his lectures, first engages our attention by the salivary glands, the physiological properties of which, as he says, have been known to us but recently.

In man and mammalia the structure of all salivary glands is very much alike. Such is the opinion of the most renowned histologists, and amongst them Kölliker. The ducts of these glands vary, but they must be considered as quite distinct from the glands themselves, so far as structure is concerned. The salivary glands of birds vary histologically from those of mammalia; but the epithelium, which is characteristic in a gland of this kind, is much the same in all.

If anatomically no difference is noticed in the structure of these glands, each of them has, however, very distinct physiological properties in relation with peculiar functions. The glands of the mouth are separately or combinedly destined to co-operate in three sets of physiological phenomena, viz., *taste, mastication, and deglutition*.

PAROTID GLAND.—The parotid gland has a very important office to perform in the process of mastication, and it bears a constant relation with the extent and importance of the latter function. Its secretion is altogether peculiar, and is strangely modified by nervous influences.

The parotidean saliva is not being constantly secreted, but more especially when the jaws are made to move. Its amount is in relation to the kind of food and the efforts required for its reduction. Mastication goes on slowly if the parotidean secretion be suppressed, and the loss of saliva by accidental fistulæ, &c., induces a sensation of thirst.

Thirst is not a local sensation, but the indication of a want of the economy for the reparation of its liquids. If horses with fistulæ of the parotid structure be made to drink, the secretion from the gland is arrested. This is not observed with the other salivary glands.

Pure parotidean saliva does not contain any alkaline viscosity. When of the temperature of the body it is clear, but it becomes slightly opaline on cooling, in virtue of the precipitation of a sub-salt. It becomes coated by a whitish

pellicle, like that on lime water, exposed to the contact of air. This precipitate, spoken of above, consists of carbonate of lime. The secretion of the parotid contains much carbonic acid. The above-mentioned deposit does not occur on the saliva of the sublingual and submaxillary glands, which, however, differs from that of the parotid by a different degree of viscosity. The density of the parotidean saliva does not vary much under different circumstances, and its alkalinity is constant. This alkalinity may vary in degree; it depends on salts of soda in the sheep and dog, but on a salt of potash in man.

The solid constituents of the saliva are either organic or inorganic. The organic are *albumen*, *casein*, and *ptyalin*. The inorganic consist in bicarbonate of potash, chloride of potassium, carbon and phosphate of lime, and sulphocyanide of potassium. These salts do not vary in their proportions in the parotidean product from that of the other salivary glands.

An important character of the secretion by the parotids, is that it is in relation with certain nerves, and there are two nerves that specially influence it, viz., the fifth and the seventh.

The other salivary glands are distinguished like the parotid from the peculiar characters of their products, and from the nerves presiding over their secretions.

SUBMAXILLARY SALIVA.—It takes an important part in connection with the sense of taste.

It is limpid, less fluid than the secretion of the parotid. On cooling, it sometimes becomes of gelatinous consistence, but no precipitate of carbonate of lime occurs, or pellicle on the surface.

The alkalinity of the submaxillary saliva is more marked even than that of the parotid. Sulphocyanide of potassium has not been discovered in it. Its characters are much the same in man and animals. The submaxillary glands are under the influence of the lingual nerve. There is some relation between the gastric secretion and the function of these glands. Acids excite salivary secretion in a peculiar manner, but chiefly that of the submaxillary, next that of the parotid, and lastly of the sublingual glands. In an hour and a quarter, during which time the secretion of saliva was excited by an acid, 44 cubic centimetres of saliva were secreted by the first, 23 by the second, and 5 by the third of the above-mentioned glands.

Bernard here discusses the question as to the nature of

ranula. Ranula, as Erichsen describes it in his 'Science and Art of Surgery,' is "a globular swelling, semitransparent, evidently containing fluid, and often attaining the size of a walnut or pigeon's egg, situated under the tongue, pushing this organ upwards and backwards, and consequently interfering with deglutition and speech. The walls of the cyst are usually thin, with small vessels ramifying on them; its contents are *watery* and *serous*. Sometimes *albuminous*, and occasionally *cretaceous* matters are found intermixed, in some instances even in large quantity, as much as half a pound of plastery stuff having been met with in a cyst of this kind." Ranula in man was looked upon simply as a tumour, till Wharton described the duct of the submaxillary gland, when it was said that in ranula there was obstruction and dilatation of this duct; but Bernard says such is not the case, and that probably it consists in a dilatation of the small ducts of the sublingual glands. Bernard has observed a case of obstruction of these ducts in the horse, with formation of a cyst containing a fluid analogous to that seen in ranula. The contents of such cysts have a close analogy with the sublingual saliva, but from being viscid and glutinous, it may become purulent in consequence of inflammation of the parietes of the cyst.

SUBLINGUAL GLANDS.—The existence of these glands in certain animals has been denied by some anatomists, but they are as constant as the function with which it is related. It has likewise been said that they may be blended together with the submaxillary glands, but Bernard says they are always distinct.

The sublingual saliva is distinguished from that of the other glands by its greater viscosity. It is transparent and there is no deposit of salts on cooling. It is alkaline, but there is no sensible effervescence on the addition of acids to it. It is characterised by the great proportion of ptyalin. It does not coagulate by heat, and is not precipitated by any metallic salt. Water containing sublingual saliva dissolves saline substances with difficulty.

The three kinds of saliva differ from each other in the nature of their organic elements: 1st. The parotidean saliva is watery, and contains a great quantity of a substance resembling albumen. 2d. The sublingual contains a viscid matter which does not acquire greater density on cooling. 3d. The submaxillary is characterised by a viscid material which gelatinizes on cooling.

21, DUBLIN STREET, EDINBURGH; Dec., 1856.

(To be continued.)

Facts and Observations.

VETERINARY MEDICINE IN SWITZERLAND.

No person is allowed to practise the veterinary art in Switzerland without a licence of the Council of State. This is granted after the passing of an examination. The Board of Health appoints the Board of Examiners, consisting of a doctor of medicine, a surgeon, a pharmacien, and two veterinary practitioners. The regulations respecting the examination, which is public and gratuitous, *viva voce*, and of two hours' duration, are similar to those adopted for other branches of the healing art; the subjects selected being such as are appropriate to the veterinary profession.

THE PREPARATION OF COLLODION FOR SURGICAL PURPOSES.

For this purpose, Hofmann introduces 1 part of cotton wool into a mixture consisting of 20 parts of the strongest nitric acid, and 30 parts of sulphuric acid, for a quarter of an hour. The operation should be conducted in a glass vessel with a cover, and the cotton stirred frequently by means of a glass rod. The cotton is then well washed, to remove the least trace of acid, and pressed strongly in a linen cloth, and before being dried it should be pulled, to separate the knotty portions. The cotton should be now dried in a sieve over a stove. Six parts of the cotton thus prepared are dissolved in a mixture of 120 parts of ether and 8 parts of rectified spirits of wine, to which 3 parts of castor oil are finally added. Hofmann states that this collodion does not crack or contract like that prepared in the usual manner.

IODIDE OF POTASSIUM AS A TEST FOR OZONE.

CLOEZ has shown by experiment that the ordinary test for ozone, the iodized starch, is unsuitable for the detection of ozone in the atmosphere. All the results obtained by these means he considers of no value, because the iodide of potas-

sium is decomposed by the nitrous vapours of the air, and by the volatile oils which are evaporated from aromatic plants; and he finds that even the moisture of the air of a closed room acts in the same way on this reagent, and also that the oxygen emitted from the green parts of plants has no ozone reaction on iodide of potassium.

POISON OF SNAKES.

A BELIEF in the existence of some antidote to "th' envenom'd sting" exists in all countries where poisonous snakes abound. Bruce states that the Arabs possess a knowledge of certain roots, which, when chewed and aided by an external use of the infusion, protects them from injury by venomous reptiles. The American aborigines place great faith in the efficacy of some half-dozen plants, and, according to Silliman, carry their credulity so far as to believe that even the smell of the leaves of the *Fraxinus Americana* (or white ash) is intolerable to the rattlesnake. Several of these reputed antidotes have been examined and found altogether inefficacious. In other instances botanists have not yet precisely determined the plant to which the natives refer. The Guaco or Huaco is one of these. It has been dubbed with the name of *Eupatorium Mikiana*, and specimens found by the Magdalena were called *Mikiana Guaco* by Humboldt and Bonpland. But a specimen recently obtained from the natives at Honduras presents many of the characters of the *Serpentariae*. The Society of Arts held a meeting last week to test the virtues, preventive and curative, of this new plant. By special request of several distinguished persons, two puff-adders from the Zoological Gardens kindly consented to appear, for this occasion only, as first and second murderers. A rabbit, after swallowing a dose of the infusion, was submitted to their notice, was duly bitten, and provokingly died; its mouth being so firmly clenched that a fair dose of the tincture of the plant could not be administered. The experiments are to be repeated. Whether successful or not, it is very creditable to the Society of Arts that they have undertaken this investigation, now that railways in India and elsewhere are stretching their long arms through jungles and thick forests hitherto only inhabited by "creeping things that revel in their spoil." The discovery of an unfailing antidote may thus save thousands of lives. If the first ex-

periments fail, we hope they will not be disheartened, remembering the line of Lactantius—

“Primus sapientiæ gradus est falsa intelligere.”

We trust, moreover, that members of our profession residing in snake-infested districts will aid in the research by forwarding any information they may obtain.—*The Lancet*.

EATING OF HUMAN FLESH BY SWINE.

THE legend which ascribes to the eating of human flesh the origin of one of the most loathsome of diseases, scarce offers a more horrible picture to the imagination than is presented by a letter in the *Ceylon Examiner* of October. We have already alluded to the ravages made by cholera in India during the earlier part of this year. The latest accounts inform us that this scourge has also devastated the beautiful islands of Mauritius and Bourbon. These islands are largely supplied with pork from Patna, a province of Hindostan that has itself been overrun by the cholera. Both there and at Calcutta the bodies of the natives are consigned to the Ganges, instead of being interred. “Let any person,” says the writer in the Ceylon paper, “at daybreak start from the gates of Government House, Calcutta; and whether his walk be to the banks of the river, or to the banks of the canals, which on three sides surround the city, he will see pigs feeding on the dead bodies of the natives that have been thrown there during the night; during the day the river police clear away and sink all that remain of the bodies. Bad as is the metropolis of India, it is nothing compared to Patna. . . . Hundreds upon hundreds of human corpses are there strewed along the strand; and fattening, Ghoul-like, upon these are droves upon droves of swine. These swine are slaughtered, cut up and salted into hams, bacon, and pickled pork, and then despatched to Calcutta. . . . The great market for this poisonous swine-produce is the Mauritius and Bourbon,” where it is foisted on the inhabitants as the produce of Europe. Moreover, as these swine are sold in Calcutta at three or four shillings each carcase, it is stated that the inferior class of homeward-bound vessels are provisioned with them, and thus this human-fed pork is introduced into Europe and America. To the conclusion of the writer, that this is a probable cause of the spread of cholera, we do not assent. But we would call attention to the revolting scenes described by him; for it is in a British possession, and under the control of British rule, that these enormities are allowed to continue.—*Ibid*.

Extracts from British and Foreign Journals.

HEREDITARY INFLUENCE, ANIMAL AND HUMAN.

(Continued from vol. xxix, p. 720.)

WE must forbear entering upon the many interesting topics which the application of the laws of heritage suggest, and conclude this paper with a glance at the influence of these laws in the development of the human race. History is one magnificent corollary on the laws of transmission. Were it not for these laws civilization would be impossible. We inherit the acquired experience of our forefathers—their tendencies, their aptitudes, their habits, their improvements. It is because what is organically acquired becomes organically transmitted, that the brain of a European is twenty or thirty cubic inches greater than the brain of a Papuan, and that the European is born with aptitudes of which the Papuan has not the remotest indication. Mr. Herbert Spencer, in his very original and remarkable ‘Principles of Psychology,’ quotes the evidence of Lieutenant Walpole, that “the Sandwich Islanders, in all the early parts of their education, are exceedingly quick, but not in the higher branches; they have excellent memories, and learn by rote with wonderful facility, but will not exercise their thinking faculty;” which, as Mr. Spencer truly observes, indicates that they can receive and retain simple ideas, but are incompetent to the more complex processes of intelligence, because these have not become organized in the race. A similar fact is noticed in the Australians and Hindoos. Nor is this wide difference between them and the European confined to the purely ratiocinative processes; an analogous difference is traceable in their moral conceptions. In the language of the Australians there are no words answering to our terms *justice, sin, guilt*. They have not acquired those ideas. In all savages the *sympathetic* emotions are quite rudimentary, and the horror which moves a European at the sight of cruelty, would be as incomprehensible to the savage as the terror which agitates a woman at the sight of a mouse. What we observe in the development from childhood to manhood, we also observe in the development of the Human Family, namely, a slow subjection of the egotistic to the sympathetic impulses. This has been overlooked, or not sufficiently appreciated, in the dispute about a Moral Sense. One school

of thinkers has energetically denied that we are born with any Moral Sense ; another school has energetically affirmed that we are born with it. And of the two we think the latter are nearest the truth. It is certain that we are so organized as to be powerfully affected by actions which appeal to this "Moral Sense," in a very different way from mere appeals to the intellect—the demonstration of abstract right and wrong will never move the mind to feel an action to be right or wrong ; were it otherwise, the keenest intellects would also be the kindest and the justest. What is meant by the "moral sense" is the aptitude to be affected by actions in their moral bearings ; and it is impossible to consider various individuals without perceiving that this aptitude in them varies not according to their intellect, but according to their native tendencies in that direction. This aptitude to be so affected is a part and parcel of the heritage transmitted from forefathers. Just as the puppy pointer has inherited an aptitude to "point"—which if it do not spontaneously manifest itself in "pointing," renders him incomparably more apt at learning it than any other dog—so also has the European boy inherited an aptitude for a certain moral life, which to the Papuan would be impossible. "Hereditary transmission," says Mr. Spencer, "displayed alike in all the plants we cultivate, in all the animals we breed, and in the human race, applies not only to physical but to psychical peculiarities. It is not simply that a modified form of constitution, produced by new habits of life, is bequeathed to future generations ; but it is, that the modified nervous tendencies produced by such new habits of life are also bequeathed : and if the new habits of life become permanent, the tendencies become permanent."* As a consequence of this inheritance we have what is called National Character. The Jew, whether in Poland, in Vienna, in London, or in Paris, never altogether merges his original peculiarities in that of the people among whom he dwells. He can only do this by intermarriage, which would be a mingling of his transmitted organization with that of the transmitted organization of another race. This is the mystery of what is called the "permanence of races." The Mosaic Arab preserves all the features and moral peculiarities of his race, simply because he is a descendant of that race, and not a descendant of the race in whose cities he dwells. That the Jew should pre-

* 'Principles of Psychology,' p. 526. In this work Heritage, for the first time, is made the basis of a psychological system ; and we especially recommend any reader interested in the present article, to make himself acquainted with a treatise in every way so remarkable.

serve his Judaic character while living among Austrians or English, is little more remarkable than that the Englishman should preserve his Anglo-Saxon type while living among oxen and sheep; so long as no intermarriage takes place, no important change in the race can take place, because a race is simply the continual transmission of organisms. The Scotchman "caught young," as Johnson wittily said, will lose some of the superficial characteristics, but will retain all the national peculiarities of his race; and so will the Irishman. "We know," says Mr. Spencer, "that there are warlike, peaceful, nomadic, maritime, hunting, commercial races—races that are independent or slavish, active or slothful; we know that many of these, if not all, have a common origin; and hence there can be no question that these varieties of disposition have been gradually induced and established in successive generations, and have become organic." This, indeed, is evident *à priori*: we have already seen that the instincts and habits, even the trifling peculiarities of an individual, have a tendency to become transmitted; and what is true of the individual is true of the race.*

It is owing to the transmission of incidentally acquired characters that every great movement in human affairs achieves much more than its immediate object. It tends to cultivate the race. How could that new, unheard-of feeling for the wives, widows, and orphans of soldiers, which so honorably distinguished the war just closed, have ever arisen, had not the sympathetic feelings of the race been cultivated during centuries of slow evolution? How could Englishmen manifest their sturdy political independence, their ineradicable love of liberty so strikingly contrasted with the want of that feeling in other nations, had not our whole history been one bequeathed struggle against the encroachments of governments? It is, however, needless to continue: wherever we look in physiological, psychological, or sociological questions, we are certain to observe the operation of the laws of Hereditary Transmission.—*Westminster Review*.

* M. Gosse, in a recently published 'Essai sur les Déformations artificielles du Crâne' (Geneva, 1855), shows that the forms artificially impressed on the skull during successive generations tend to become hereditary, and that, consequently, we must assign less value than has been hitherto assigned to those characteristics of distinct races which the forms of the skull have supplied.

ALOINE.

By Mr. T. B. GROVES.

IN the July, 1851, number of the *Pharmaceutical Journal*, appeared a paper by Messrs. Smith, of Edinburgh, on Aloine, a crystalline principle they had succeeded in isolating from Barbadoes aloes, and which they regarded as its active principle. They proved also the existence of this body in a crystalline state in the Cape and Socotrine varieties, though they succeeded in obtaining from them only very insignificant quantities.

The behaviour of aloine with reagents was fully detailed by them, and its formula supplied, as obtained by Dr. Stenhouse.

This latter chemist also devoted considerable attention to the subject, and arrived at the same results as Messrs. Smith—that aloine is scarcely obtainable in sufficient quantity, or in such a state of purity as to be recognisable, from any other than the Barbadoes variety.

M. Robiquet, in an article read to the Académie de Médecine,* February 26, 1856, and published in the *Chemist* of July, 1856, arrived at the same conclusion with regard to Cape and Socotrine aloes, but gives a much more easy and productive process for its preparation from Barbadoes aloes.

All these gentlemen express their belief that the opaque varieties alone contain any considerable proportion of aloine in a crystallizable state, and that the vitreous or translucent varieties have undergone the action of heat subsequent to inspissation, and that the fusion has converted the aloine into an amorphous substance, quasi-resinous. From a perusal of the works of the first two experimenters, and a consideration of what had hitherto been published respecting the manufacture of the different varieties of aloes, I was early led to doubt the accuracy of some of their conclusions.

For instance, Pereira states that the best Barbadoes aloes is procured by evaporating in a copper vessel, over a naked fire, the juice that spontaneously exudes from the transversely cut stems of the aloe (the decoction of the leaves is not unfrequently used), and that the evaporation is carried to such a point that the extract on cooling “breaks short”—in other words, has been reduced to dryness and incipient fusion.

The Socotrine, on the contrary, appears to be the pure spontaneously exuded juice of the cut leaves, evaporated, after depositing its grosser parts, by the sole agency of the sun.

If it be true then that aloine is so readily altered by contact of air, simultaneously with the application of heat, one would scarcely be justified in attempting its preparation from the former kind, without first applying to the latter.

Again, aloine is proved to be but slightly soluble in cold water; then why use cold for its separation? or ether, which dissolves it so sparingly?

I shall be able to show that Socotrine aloes contains a considerable proportion of crystallizable aloine, to be obtained from it without extraordinary difficulty or precaution.

The following circumstance that occurred shortly after the publication of Messrs. Smith's paper, first suggested an inquiry. I was engaged in filling a small pot with the aqueous extract of Socotrine aloes, when I was called away for a short time, and on returning, observed that a bubble of considerable size had, by the gradual subsidence of the extract, formed on its surface. The extract, when first made, had been perfectly transparent, but the surface of the bubble I observed to be studded with bodies of a regular

* Given in our number for September.

shape, which unassisted sight enabled me to recognise as crystals of aloine—the microscope afforded more certain evidence.

I will here observe parenthetically, that by cautiously blowing a bubble of a suspected extract, a very trifling amount of crystallization may be detected, that cannot readily be discovered in any other way.

The extract that afforded this indication had been prepared by exhausting Socotrine aloes with boiling water; filtering the cooled liquor, a little carbonate of magnesia being previously added; and evaporating by a steam heat. The exhaustion requires a little knack. The aloes should be coarsely powdered, and sifted through a 40-hole brass sieve, then shaken lightly off a wide spatula into the boiling water, kept in constant agitation during the addition, and maintained in that state for twenty minutes after. The aloes will by this means be completely exhausted, and, by allowing the liquor to stand quiet till cold, the resinoid substances will deposit and adhere to the bottom and sides. The magnesia is added without decanting the liquor from the vessel. It filters very readily through serge, affording a perfectly bright liquid and extract. It is rendered turbid by the addition of acid.

Aloine has not been permanently introduced into medical practice in this part of the world, so that I had no inducement to prepare a larger quantity than sufficed for experiment. Indeed, in investigations in general, the smaller in reason the quantity of material operated on, the greater will be the care expended on it, and less dubious the results arrived at—the chief disadvantage being the loss occasioned by not being able to economise the mother-liquors.

One ounce of Socotrine aloes was therefore powdered and exhausted as previously described. When cold, hydrochloric acid was added to slight acidulation—a resinous precipitate was formed, which caused filtration to proceed with great difficulty. The addition of finely-powdered wood charcoal would have much facilitated it. Washed arrowroot has not so good an effect. The solution was, after filtration, evaporated by a water-bath to the consistence of syrup, transferred to a small basin covered by bibulous paper, and set aside on a shelf of the laboratory.

In less than a week crystallization had commenced; in a fortnight it had become a mass of crystals, that had grown irregularly, considerably above the level of the liquid. They were transferred to coarse blotting-paper, allowed to drain a day or two, then shifted to another piece, wrapped in it, and gently pressed by means of a weight. Cautiously proceeding thus, they were at last powerfully pressed with a screw, and presented the appearance of a brown-coloured brittle mass. This was dissolved in as small a quantity as possible of boiling water, allowed a few days to crystallize, and then treated as before. A third crystallization sufficed to procure crystals of a pale lemon colour (pure aloine), which weighed when dry 48 grains—10 per cent. of the aloes employed. I found it was necessary to dry them in the compressed mass, closely wrapped in blotting-paper, and at a temperature of about 100. The surface and edges only were oxidized, and were removed before powdering and weighing. When thoroughly dry, it does not appear to undergo change at the ordinary temperature. When damp, however, and at the same time exposed to heat, it oxidized rapidly, and could be made to assume almost exactly the appearance of the aloes whence it was originally taken.

I am therefore of opinion that it is not to their possessing a vitreous character, but to circumstances connected with the composition of the original juice from which they are made, that the various degrees of facility with which aloine may be obtained from them is due, and that aloine may be procured from all that have not been actually carbonized.

With respect to its purgative power, of which M. Robiquet denies it the

possession, and which, to cause such variety of opinion, must at least be very uncertain, I think, with M. Robiquet, that it is only when oxidized it possesses that power. It would be impossible for it to pass through the intestines without some degree of oxidation, and that degree would vary as circumstances varied during its passage; the variation of its purgative activity is hereby accounted for. M. Robiquet proposes to use it for the treatment of fever, &c., as an antiperiodic; and with the idea, I presume, of preventing its oxidation, and consequent aperient effect, gives it in combination with finely divided metallic iron (*fer réduit*).

Perhaps were the dose enveloped in wax or spermaceti, or still better, in Evans's membrane capsules, so that it may pass into the bowels previous to solution, the result would be more uniform.—*Pharmaceutical Journal*.

Weymouth, July 21, 1856.

ON THE ACTION OF URARI AND OF STRYCHNIA ON THE ANIMAL ECONOMY.

By Professor ALBERT KÖLLIKER, of Würzburg.

(Communicated by Dr. SHARPEY, Secretary to the Royal Society.)

THE communication which I now offer to the Royal Society, contains a brief statement of the results of a series of experiments which I lately made on the action of the urari poison and of strychnia on the animal economy.

I. URARI.

The urari is the well-known poison from Guiana, also called Curare and Woorara. That which I employed in my experiments I owe to the liberality of my friend Professor Christison of Edinburgh. The following are the conclusions at which I arrived respecting its operation:

1. The urari causes death very rapidly when injected into the blood or inserted into a wound; when introduced by way of the mucous membrane of the intestinal canal, its effects are slow and require a large dose for their production, especially in mammalia. When applied to the skin of frogs it is altogether inoperative.

2. Frogs poisoned with very small doses of urari may gradually recover, even after it has produced complete paralysis of the nerves. Mammalia may also be restored, even after large doses, provided respiration is maintained artificially.

3. The urari, acting through the blood, destroys the excitability of the motor nerves. In frogs under its operation the terminal branches of these nerves within the muscles lose their excitability in a few minutes, whilst their trunks become

affected an hour or two later. If, after the nervous extremities have become paralysed, the heart of the animal be excised so as to prevent the nerves from receiving any further share of the poison, the nervous trunks may retain their excitability for three or four hours.

4. The brain is less affected by the urari than the nerves in the muscles; still when, by ligature of the two aortic arches, in frogs, the poisoning is confined to the anterior half of the body, the voluntary movements of the limbs speedily cease, while automatic movements, of doubtful nature, and probably proceeding from the medulla oblongata, may be still observed for half an hour or an hour after the poison has begun to operate.

5. The spinal cord is considerably less affected than the brain by this poison, and by local limitation of the poisoning (as in No. 4) it is found that the cord retains its reflex activity from half an hour to an hour and a half, and the excitability of its white substance, or its conducting power, from two to three hours after the poison has taken effect. It is worthy of remark that in such cases the impaired reflex activity of the spinal cord may be revived by strychnia directly applied to it.

6. The sensory nerves, as shown also by locally limited poisoning, retain their functional activity as long at any rate as reflex actions can be excited, and when the depressed reflex activity has been revived by means of strychnia, these nerves are found not to have been in the slightest degree injured, so that it seems doubtful whether the urari in any way affects them.

7. The nerves of the involuntary muscles and of the glands are also paralysed by the action of urari, at least I find this to be true in the following cases, viz.—

a. The pneumogastric, as regards its influence on the heart.

b. The sympathetic (its cervical portion), in its relation to the iris.

c. The nerves of the posterior lymph-hearts of the frog.

d. The nerves of the vessels in the web of the frog's foot.

e. The splanchnic nerves of the rabbit, as affecting the peristaltic motions.

f. The nerves governing the secretion of the submaxillary gland in dogs.

8. The voluntary muscles remain perfectly excitable, but show a greater tendency than usual to merely local contractions. In general the cadaveric rigidity of these muscles appears to set in later than usual.

9. The plain or non-striated muscles also remain long irritable after poisoning by urari.

10. The heart, in amphibia, is little affected by urari. Its pulsation as well as the circulation of the blood goes on regularly for many hours after the poisoning is established. The only thing worthy of note is that the beat of the heart appears to be somewhat quickened, probably from paralysis of the pneumogastric nerves. In frogs poisoned with urari, the heart, when cut in two, shows the usual phenomenon, namely, that the half which contains the ganglia continues to pulsate while the other does not; from which it may be inferred that these ganglia are not paralysed. As to the nerves in the substance of the heart, those at least which are derived from the pneumogastric are unquestionably paralysed (*vide* No. 7).

11. The lymph-hearts of frogs poisoned with urari soon cease to move.

12. The blood of animals poisoned by urari is fluid and dark, but coagulates when drawn from the vessels, and forms a weak clot which is but little reddened by exposure to air. Directly mixed with blood, urari does not prevent coagulation; but the blood in this case also remains dark, and scarcely reddens on exposure.

13. The blood of animals poisoned by urari has the same poisonous qualities as that substance itself, but not in a degree sufficient to produce the full effects of the poison. Urari when directly mixed with blood loses none of its efficacy.

14. Urari, in concentrated solution, applied locally to nerves extinguishes their excitability, but only after a considerable time; and it appears to act similarly on the nerves in the substance of the muscles. Dilute solutions have no injurious operation. Applied directly to the brain and spinal cord, urari is altogether harmless provided its absorption be prevented.

15. When artificial respiration is kept up in quadrupeds poisoned with urari, I find that, as observed by Bernard, many of the secretions become increased—as the tears, saliva, urine, and mucus of the air-passages, which effect appears to be owing to the paralysis of the vascular nerves, and consequent dilatation of the vessels caused by the poison.

16. In mammalia urari causes death by paralysis of the respiratory nerves and suppression of the respiration, which brings on convulsions in these animals as a collateral effect. In frogs the final extinction of the functions may also be partly ascribed to suppressed action of the lungs and defective oxidation of the blood, which at length renders the heart

unfit to perform its office; but it must be observed that in this case the cause of death is not so plain, inasmuch as in these animals the functions are in a great degree independent of the pulmonary respiration.

II. STRYCHNIA.

Some experiments with strychnia (the acetate) gave the following results:

1. Strychnia has not the least influence on the peripheral nerves through the blood, which is best shown by cutting the nerves before administering the poison.

2. Strychnia paralyses the motor nerves of the voluntary muscles by exciting them to too energetic action, a paralysis which may be compared to that caused by powerful electric currents acting upon the nerves. In frogs, when the tetanic spasms are over, the nerves often show no trace of excitability; in mammalia they generally retain it in a slight degree, but never show the same energy of action as when uninjured.

3. Strychnia does not affect the sensory nerves.

4. The heart is not affected by strychnia, not even during the tetanic spasms, with the exception only that its pulsations are sometimes a little slower during the tetanic state. On the contrary, the lymph-hearts of frogs contract themselves as soon as the tetanus begins, and remain in this state as long as the spasms last.

5. The tetanic fits can be brought on in two ways: first, through the sensory nerves, which, by irritating the gray substance of the spinal cord, produce the tetanic contractions as reflex movements; and, secondly, through the brain, which is not affected at all by strychnia, and preserves its powers of volition and sensation. Accordingly, animals poisoned with strychnia try to move in the ordinary way; but every attempt brings on a tetanic fit, so that it is plain that the spinal cord may also be excited by the brain to its peculiar actions.

6. If the tetanus produced by strychnia has been strong, the muscles are less irritable and pass much sooner into the state of cadaveric rigidity, which is very strongly marked, and seems to last longer than it generally does. The same early onset of rigidity may be observed in animals killed by tetanus excited by electricity.—*Medical Times and Gazette*.

ON THE CONTRACTILITY OF TENDONS.

By M. GUÉRIN.

IN this memoir M. Guérin calls into question the accuracy of the doctrine which regards the tendon as a mere passive instrument for the transmission of motion. He has long been of opinion that it is possessed of contractility, although of another description to that inherent in muscular structure. He thus sums up the results of his observations :

1. *Histological facts*.—M. Guérin long since demonstrated that, under certain determinate conditions, such as constant and excessive tension, a muscle may pass into the fibrous state, resembling, in every histological particular, its tendon, of which it now forms but a mere prolongation. Able microscopists have repeatedly found themselves quite unable to distinguish between the two. From this identity of structure he was led to infer identity of function. Moreover, he, as well as other surgeons, had observed that muscles, evidently in a fibrous state prior to an operation, the result of which was the restoration of their normal length and tension, frequently, in the course of years, or even of months, regain their fleshy condition.

2. *Pathological facts* enable us to establish directly the conclusions proceeding from the above induction. In 1840, M. Guérin first proved that tendons are susceptible of a special retraction, independently of the muscle properly so called ; that is to say, that they may become and remain shortened, as a consequence of a kind of spasm limited to their sphere of action. This, besides being met with in various lesions implicating only the tendons (as in certain burns, abscesses, &c.), is of frequent occurrence, and easy to recognise in rheumatic and scrofulous affections of the joints. The anatomical character of tendinous retraction, distinguishing it from the retraction of the muscle properly so called, is the diminution of the length of the tendon in relation to the muscle, which preserves its normal length. The contrary takes place when the muscular fibre primarily participates in the retraction, or is its principal seat. The retraction originates in a lesion and pain localised near the insertion of the tendon, as in certain arthralgias, under the influence of which an attitude of the joint is assumed in relation to the action of the shortened tendons, without participation of the muscles properly so called. Such attitude has been supposed to be assumed voluntarily in order to obtain relief from pain ; but an in-

spection of the special directions imparted to the parts shows that these much oftener relate to the isolated action of this or that tendon, than to the collective action of the muscles that move the joint. This retraction, as in the case of that of muscles, is but the pathological expression of a physiological property possessed by the tendons.

3. *Physiological facts*.—The tendon of the patella is separable into two distinct portions, just as if they were separate tendons, which may be termed *infra*-patellar and *supra*-patellar tendons. It happens not unfrequently, as a consequence of disease, that the patella becomes ankylosed, or fixed to the femur, isolating from the muscular extremity of the tendon, the contraction proper to the latter. On observing what takes place in such persons, during efforts to raise the limb, we find that, at the same time, the extensor muscles of the thigh contract, the *infra*-patellar tendon—*i. e.*, the portion situated between the immoveable patella and the tibia—participates in this contraction, becoming sensibly hardened and shortened, both to the touch and sight. We may, indeed, observe upon ourselves the contractions of this *infra*-patellar tendon during certain attitudes. If, while in the sitting posture, we place our fingers along its track, we find it become distended and hardened during every effort made to raise the leg, still keeping it at the same degree of flexion, the patella remaining immoveable and strongly applied against the femur.

4. *Nature of the contractility*.—The contractility of tendons is not identical with that of muscles, for it cannot be induced by galvanism. There are, too, other contractile organs, not excitable by galvanism, such as the *dartos*. The muscles themselves present sometimes an exceptional state; for, after saturnine paralysis, they continue to contract under the influence of the will, but are completely insensible to the influence of galvanism. By means of two experiments, M. Guérin endeavours to point out the limits of both muscular and tendinous contraction; and he considers that the latter comes into operation when the weight of the body to be moved induces resistance. Hence he terms this tendinous contractility the *contraction de résistance*, indicating thus its true experimental character, and its difference from voluntary contraction.—*Gazette Médicale*, No. X, 1856.

THE VETERINARIAN, JANUARY 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE ANNUAL ADDRESS OF THE EDITORS.

“God’s sand-glass has been shaken—lo! there falls
Upon the distressed, upturned brow of Earth,
Another of the year-grains. It is thus
Time’s sands increase—how imperceptibly!”

AT this the commencement of the thirtieth volume of our Journal, and the third year of our Editorship, it might, perhaps, be expected that we should come forth with some announcement of alteration or proposed improvement. But we feel that we are not called upon to do so; since the support and assurances we have received, while they awaken in us grateful feelings, warrant us in believing that what has been already done has been approved of. We shall, therefore, be content to continue the same plan until we are instructed that it would be wise to alter it. Old ruts are something like old friends; they are safe, and we do not like to part with them; yet they may be travelled over too long, and become worn too deep. This, however, we hope we shall not do as we continue our progress.

The past year has been big with momentous events, surpassing many that have gone before it. At its beginning the red arm of war still held aloft its blood-stained banners;

“While pealing shot and mangling shell
Performed destruction’s bidding well.”

And the flashing and thundering of the cannon; the crashing of the balls and tumbling ruins of the opposing fortress that rattled and resounded as they fell, continued without intermission, till the mighty works were levelled with the ground, and

“Ruin, as she scanned their lot,
Read that they were, and—they are not.”

Many of our professional brethren, in the performance of their duty, witnessed these appalling scenes, although they were not called upon to take any active part in them. Theirs is not to slay, but to heal. Since then gentle Peace has waved her olive branch over the contending nations, and our brethren have returned to the more quiet, but not less responsible, pursuit of their calling at home. With some of them, alas! the pestilence, and other sad contingencies of war, have done their work as effectively as if they had been engaged in the hot contest on the battle-field.

“Sit vobis terra levis.”

Our object in alluding to this at the onset of our address is, to urge some of our friends, who now must have leisure; to give to us an account of what was to them novel or interesting in connection with their profession when they were more actively engaged. Retrospects often prove profitable; and our pages have been, on the whole, very barren of information on this head. Only from two, or three at the most, have we received any communications whatever, although the field appeared to us to have been a most fruitful one, and promises were very abundant. These, we trust, will be now fulfilled.

It was very encouraging to us to commence the past year with so goodly an array of new contributors. Our expectations in this respect have been fully realised; and it is gratifying to be able to record that, in this respect, there has been a steady increase. Still, in looking over the list, we perceive the absence of many names we should have much liked to have found there. We will not, however, despond; nor are we anxious to inquire into the reason of their absence, since we are not conscious of having done aught to forfeit their friendly feeling towards us; but we will hope on until the time comes when they will be with us. Of this we are quite sure, their charity will not be like that of some persons, who, when the mendicant seeks alms of them,

they courteously acknowledge it, even to the returning of the salutation, and then tender them excellent advice, leaving them with their best wishes, "be ye filled, be ye clothed;" but they give not the unfortunate wretch the means where-with he can accomplish either the one or the other.

We will, for the nonce, confess our faults, and acknowledge that we are both ambitious and somewhat tinctured with a feeling of pride. We are ambitious that our Journal should take its stand in juxtaposition with those of the other professions; and proud, indeed, shall we be when this is attained. A spirit of emulation has been awakened in us, and we are resolved not to desist until all we have determined on is gained. To the members of our profession we must continue to look for support in furnishing us with the more useful or practical matter; but as practice without theory is like a ship without a rudder or a compass, so we, as pilots and steersmen, will endeavour to supply a little in this division, and thus contribute to the perfecting of one harmonious whole; which we trust will be equally honorable to all who take part therein, and from which all may derive a corresponding benefit.

It is quite possible that in some of our decisions there have been errors committed, arising from over-cautiousness, since many communications received by us we have laid aside. This discretionary power we claim a right to, but are anxious only to use it for the general good. To be faultless we never hope to be. At times, too, our animadversal vision may have been impaired.

"Nemo mortalium omnibus horis sapit."

Should any of our readers, therefore, feel themselves aggrieved, from a seeming slight thrown on them by their articles not having been admitted into our Journal, they will accept this as our reason. To others it may have appeared that our pages, during the past year, have contained more political matter than they had anticipated. If so we can only say we have never courted it, and fain would we eschew it altogether. Yet have we felt it to be our duty, from time to time, to give

insertion to communications coming from members of the profession embodying complaints, such being made in a becoming spirit, not awakening controversy or indulging in personalities. This, indeed, we think they have a right to demand at our hands; for through what other channel can they make known any grievance, real or imaginary? By what other means seek redress, or express their sentiments on matters affecting the profession as a body? We at the first determined on being independent journalists, and we still intend to be so. We have not been used to trammels, and none can or will we bear. Nevertheless, we shall continue carefully to guard against the introduction of all asperity, and to exclude that which provokes the uncourteous retort. But whilst we allow of the insertion of what we have alluded to, we must not be thought to hold with or to advocate the particular views of our correspondents; and we reserve to ourselves the right to offer comments on them whenever we feel it necessary to dissent from them, since we cannot and will not sacrifice our principles. The times do not admit of it, nor have we any desire to become exclusives. The consequences of this course of conduct we are quite contented to leave, for we fear them not.

We did not in our last year's address express ourselves so confidently as our convictions would have warranted us in doing. From what we had then experienced, our anticipations, it is true, were great, but the duties being somewhat new to us, at least in connection with this journal, we thought it prudent for a time to withhold them; but now that another year has rolled away into the ocean of the past, upon taking a dispassionate review of what has been done during it, and reflecting on the kind support we have hitherto received, we think we may, without any ostentation, venture to predict that there is now no doubt of our success. We say without ostentation, because we shall owe this to others rather than to ourselves; while it shall ever be our earnest study to merit the continuance of their support. And should the result be as we have ventured to predicate, then will the profession possess a record of valuable facts, which, while it ministers

to the exigencies of the present generation, will be referred to by succeeding ones with equal advantage and gratification. We feel that we are but a small section indeed of what has been designated the "Fourth Estate," but we are, nevertheless, desirous of making our pages worthy of those to whose interests they are devoted, and solicitous that it never may be said of us we have proved "a sham, a delusion, and a snare."

Turn we now to a less pleasing, but not less important theme. During the past year our obituary has been large. Many with whom we once held intercourse have passed from time to eternity.

These records may prove useful as so many "memento mori." Here is not the place of our continuance. The old and the young that have gone before us we must soon follow. How soon we know not.

"Each can see that he grows older,
And can note it day by day."

The grave may have no charms to allure us, the charnel-house nothing to attract us; yet is it wise and profitable at times to survey the place where ere long we shall take up our abode. It will at least serve to allay the ferment and excitement in which we are continually kept by things temporal, and perhaps induce us to reflect a little on things eternal, remembering that "death is but the waiting-room where we robe ourselves for eternity, and that the tomb of the Eternal has made earth the cathedral of God."

WE beg to call the attention of our readers to a proposition made by Mr. Varnell, in the present number, for the formation of a society for the protection of the members of the profession in cases of accidents occurring to animals while under their immediate care or attendance. We cannot but think that such an association would be accompanied

with considerable advantage. Frequently have we known it to be the case, that an animal, on being cast for an operation, has by struggling, when confined with the hobbles, so much injured himself as to be unable to rise, and has been, of necessity, slaughtered on the spot. Yet all proper care and caution were exercised. Again, certain operations are frequently followed by fatal results, over which the veterinary surgeon can have no possible control. So, in the administration of a draught, from restlessness or resistance offered on the part of the animal, a small portion of it has found its way into the trachea, creating much irritation, and which has been followed by inflammation of the bronchi and death. No blame whatever could be attached to the giver of the draught, but the owner, nevertheless, has held a different opinion, and contended it was the result of sheer carelessness. Likewise purgative agents have been often exhibited, which from a peculiar idiosyncrasy have produced super-purgation, and sometimes death. Censure has been at once cast upon the prescriber, although none was really merited by him. In all these and many more instances that might be named, for we have adverted only to those which have come under our own notice, we are of opinion that such a society as that referred to might be advantageously called upon to decide whether or not the practitioner was culpable; and if it be ascertained, on a careful and impartial investigation having been made, that he was not, such opinion should be communicated to the owner of the animal. And if it should be the case that he still persisted in his charge of culpability, and is resolved to proceed to law with a view to obtain damages for the loss he has sustained; then it would be equally the duty of the society to stand by and support the unjustly accused member; for it must be borne in mind that many can defend that which one alone often cannot; and we have known members of the profession pay large sums of money, and thus compromise the matter, rather than jeopardise their reputation by an appeal to the uncertainty of law.

We echo Mr. Varnell's solicitation that others in the profession will give to the subject the consideration it merits, and

favour us with their opinions. Ours is now known to them, from which it will be inferred that we give to the scheme our hearty concurrence.

FORMATION OF A CAVALRY COLLEGE.

OUR attention has been directed to an advertisement that has recently appeared in the daily journals, the prospectus of a Cavalry College, to be instituted at Roehampton, under high patronage, and also proposed to be incorporated under Royal Charter.

“The object of this institution is to give a good cavalry education to the sons of noblemen, gentlemen, and officers of the army, who are desirous of placing their sons in the cavalry as a profession.

“The pupils will receive instruction in the following branches: Latin, Greek, French, Italian, German, the Asiatic languages, moral and political philosophy, history, geography, mathematics, natural history, cosmography, physical sciences, descriptive geometry, botany, chymistry, permanent and field fortification, drawing, mapping, riding, gymnastic exercises, and veterinary surgery; together with all other branches of education necessary to form a useful member of society, a good soldier, and an accomplished gentleman.”

That to which we wish more immediately to refer, is the statement made that “Veterinary Surgery” will be placed under the direction of the principal veterinary surgeon to the army, J. Wilkinson, Esq. We unhesitatingly hail this as an omen for good. It is much to have the utility of veterinary science recognised by such a body; and we well know the capabilities of the person on whom the superintendence of this department devolves; and feel convinced that in him its interests will be carefully watched over, and as earnestly promoted. Moreover, this recognition of our art will, we doubt not, work incalculable good for the profession as a body. It will awaken a spirit of emulation among those who aspire to become its members; and be the means of compelling the student more assiduously to labour in

the acquirement of scientific principles, from his knowing that he will be brought frequently and oft into contact with gentlemen who are not ignorant of them; and who, it may be, know as much scientifically, if not practically, as he himself does. We believe it to be conceded, that one who has become conversant with the principles of his profession would rather be consulted by a person who is also educated therein than by a rude and ignorant employer. With the one, he can reason, and his opinions will be duly weighed and appreciated; while with the other all reasoning will be of little worth, if so be the result has not been so favorable as was anticipated by him. Again, in a doubtful case, the scientific man will often have carefully to watch the phases of disease, and deliberately to consider ere he proceeds to act, depending upon the symptoms presented. This the educated employer at once sees, and is contented to wait patiently, let the consequences be what they may. On the other hand, he who knows nothing about the subject will be constantly interfering; and not unfrequently will propose the adoption of some sage plan suggested to him by the village blacksmith.

“Fools rush in where angels fear to tread.”

Her Majesty's Secretary of State for the War Department has lately stated in public, that “the army is no longer the loose profession it once was. Men now attend to their education in it.” And an extension of this appears to be determined on by making the officers familiar with the principles of veterinary medicine. It behoves, therefore, all those who are desirous of entering the army as veterinary surgeons, to be on the alert, and to lose no opportunity to render themselves *au fait* in all things that appertain to their vocation. And a spirit of this kind being engendered among them, it will react upon the mass, and thus good to the profession as a whole unquestionably result, as we have before stated.

To this institution, therefore, in common with similar educational colleges—for instance, the Royal Agricultural, and others—in which veterinary medicine is being taught, we wish all prosperity. 'Tis theirs to break up the fallow ground,

and to prepare it for the reception of seed in the form of principles, which, if rightly inculcated, cannot fail to germinate and bring forth fruit; thus benefiting the profession by rendering its worth more obvious, and giving to it a higher status.

We hold and maintain that if structure and function were better understood by the community at large, quackery would be less rife, and pretenders have but little, if any, chance of success. We therefore say—EDUCATE! EDUCATE! EDUCATE!

ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following having undergone the required examination for the diploma, were admitted members of the College, at a meeting of the Court of Examiners, held on the 17th of December, 1856:

Mr. C. J. Milner, Headcorn.
 „ W. J. Johns, London.
 „ G. R. Naden, Lichfield.
 „ J. Hipper, London.
 „ H. C. M. Orbell, Romford.

QUARTERLY MEETING OF COUNCIL.

IN the report of the last Quarterly Meeting a mistake is made in the announcing that Mr. Turner proposed the resolution that the Council did not think it eligible to reduce the fee; that motion having been made by Mr. Langworthy.

Professor Morton seconded Professor Simond's motion for its reduction.

MISCELLANEA.

WARM BATHING.

MANY erroneous notions prevail respecting the use and properties of the warm bath. To many persons, the idea of submersion in hot water, on a summer's day, would appear preposterous; but if it be rationally considered, it will be found that the warm bath may be taken with equally, or perhaps greater benefit, in the summer than in the winter. During hot weather the secretions of the skin are much increased in

quantity, and consequently a greater necessity exists that it should be kept perfectly free from obstructions. Another prevailing error respecting the warm-bath is, that it tends to relax and enervate the body; for experience has sufficiently proved the fallacy of the opinion, and many physicans have prescribed its use to patients labouring under debility from disease, none of whom experience such effects, but have all felt invigorated, and mostly restored to health and strength. Many persons are deterred from using the warm bath, especially in winter, from the fear of catching cold; this fear is groundless, for it has been found that the warm bath, by increasing the circulation in the body, renders it more capable of withstanding the effects of cold than it otherwise would have been.—*Popular Errors Explained.*

LICHENS.

Lichens are perennial; they grow very slowly, but they attain an extreme age. Some species, growing on the primitive rocks of the highest mountain ranges in the world, are estimated to have attained an age of at least a thousand years; and one author mentions, after the lapse of nearly half a century, having observed the same specimen of *Sticta pulmonaria* on the same spot of the same tree. If this be the case, it is impossible to calculate how many ages we must go back in memory to trace the origin of the lichenose coating, the gray and yellow "time-stains" of many a weather-beaten battlement; or to consider what deeds these venerable crusts have witnessed what changes they have outlived in the past history of our country. The hoary Usneas, Ramalinas, and Physcias of our forest trees, like the grey beard of an old man, silently but eloquently proclaim Time's ravages, and illustrate the constant succession of life upon death, growth upon decay, which is going on around us. We have alluded to the age of the individual; we shall find no less interest in regarding the geologic age of the family. Unger, in his "Pælophytology," mentions Lichens among the few cryptogamic plants which have been detected in a fossil state in the lower or earlier palæozoic strata.—*Lindsay's Popular History of British Lichens.*

OBITUARY.

On the 27th of November, very suddenly, at his residence, Foregate Street, Chester, Mr. Richard Allen, M.R.C.V.S., in the 51st year of his age. Mr. Allen obtained his diploma in 1831.

THE
VETERINARIAN.

VOL. XXX,
No. 350.

FEBRUARY, 1857.

Fourth Series,
No. 26.

Communications and Cases.

INABILITY TO MASTICATE, DEPENDING UPON
LESION OF THE STERNO-MAXILLARES MUS-
CLES OF A HORSE.

By E. BRABY, M.R.V.C., London.

THE subject of the somewhat unusual affection I am about to describe, is a bay nag-gelding, about ten or eleven years old, to which my attention was first directed about two months ago, the owner having purchased him two days previously at a public sale. When requested to see him, I was informed that it was in consequence of his having a cold, and being off his feed. I found him suffering from an attack of inflammation of the lungs of a sub-acute character, which was associated with soreness of the throat, and much general debility, and also with extreme rigidity of the muscles of the jaw, the animal evidently feeling pain when the mouth was attempted to be opened: indeed, this could not be effected to an extent sufficient to allow of the administration of a ball. I was at first inclined to attribute this difficulty of opening the mouth to the soreness of the throat, and the general inflammation of the parotid glands. The ordinary treatment in such cases was had resource to, and by about the fourth day the catarrhal and other symptoms had to a great extent subsided; but still the animal was only partially able to move his lower jaw. From the symptoms now present, I was induced to think that there must be either some chronic disease of the maxillary articulation, or that an abscess was forming within the substance of one of the parotid glands,

and in close proximity to the joint. Stimulating embrocations, with fomentations, &c., were employed for nine or ten days, but without benefit, as the animal still showed the same difficulty in moving his jaw, and was unable to take but a very small quantity of food. Under such circumstances it was determined to leave the case for a time to the

“*Vis medicatrix naturæ.*”

I may state in this place, that the animal had some time since met with an accident, by which the trachea was fractured and other injuries sustained, and which led to the neck becoming permanently distorted; but as such cases are not very uncommon, I took but little notice of it. After an interval of about a fortnight, I again saw the patient. He was much in the same state as before, but the digestive and assimilative processes were now very imperfectly performed, and which I attributed chiefly to the horse not being able to masticate any food; besides this, the motion of the jaw being limited, a sufficient flow of saliva was not excited in these attempts. He was thus compelled to exist almost wholly on oatmeal gruel, of which he took freely.

Being somewhat in doubt as to the true pathology of the case, I resolved to send the horse to the Royal Veterinary College, with a view of obtaining the opinion of the professors. The case was minutely investigated both by Professor Spooner and Mr. Varnell, when it was ascertained that the sterno-maxillares muscles, in consequence of the injuries they had sustained near their sternal attachments, at the time the animal met with the accident, were rendered powerless as adjuvants in opening the mouth; thus, throwing the whole of this function upon the stylo-maxillares and digastrici, and which of themselves they were unable to perform. The masseters and temporal muscles had thus lost their antagonists, besides which these muscles were likewise much atrophied. It was also the professors' opinion that no treatment was likely to be of benefit in such a case.

I have within the last few days learnt that the owner getting tired of nursing the animal, as he was unable to work, and was much out of condition, had also resolved to send him for sale by auction, which was done. It is more than probable that the animal is tolerably well known in the market, and that he has had several owners before coming into the possession of the person who brought him under my notice.

CEREBRAL CONGESTION TERMINATING IN INFLAMMATION OF THE SPINAL CORD IN A HORSE.

By CHARLES E. BARTON, M.R.C.V.S., 1st Lancers, Camp,
Neemuch.

THIS horse, a remarkably fine chestnut Arab, aged six years, was brought to the hospital on the 2d August, 1856, having a slight abrasion on the outside of the off knee. On inquiry, I found that he had fallen down at his picket; but, as he appeared to be in good health, the secretions all natural, the pulse but 38, and the appetite good, I merely ordered the knee to be fomented and for him to be sent back to the lines.

On the following morning he was again brought to the hospital, having fallen down twice during the interval, but still there were no symptoms yet present to indicate sickness of any kind. Suspecting, however, slight congestion of the vessels of the brain, I ordered him to be kept in the hospital, his grain to be stopped and bran mashes substituted; also an enema to be administered twice or three times during the day, and a dose of cathartic medicine to be given on the following morning.

At noon, it was reported that the horse had broken away from his head and heel ropes, had galloped round the enclosure, and on returning towards his stall had fallen down apparently dead. On visiting him I found him lying in an insensible state, with his head slightly raised and resting against a *Tân* (a moderate elevation on which the out-patients are picketed); the pulse was slow and scarcely perceptible; the breathing was but little disturbed, but accompanied with more heaving of the flanks than natural. The Schneiderian membrane was much congested; the pupils dilated, and the mouth hot, while the ears and extremities were of a natural temperature. Venesection was immediately had recourse to, and as he was lying in a very favorable position for the operation, nine quarts of blood were speedily extracted. The pulse quickly rose to 86. A draught consisting of

Hyd. Chlor., $\mathfrak{z}\text{j}$,
Aloës Barb., $\mathfrak{z}\text{ij}$, et
Ol. Lini, Oj,

was then given, and the enemata were ordered to be continued.

3 p.m. Pulse 80. Animal still paralytic, but more

sensible: has made one or two ineffectual attempts to get up. Continue the injections, with the addition of Ol. Lini, Oss, and keep him perfectly quiet.

5 p.m. About the same: the bowels have been relieved, and he has also passed a small quantity of high-coloured urine. I had him lifted into the hospital by means of ropes and horse-cloths, as it was threatening to rain.

10 p.m. He is still in the same powerless state, but is enabled to move the *fore* extremities. The eye is susceptible to light, and the Schneiderian membrane still much congested, though less so than before. He has, by means of a bottle, taken a little chilled water, and seems inclined to eat, if allowed to do so. Ordered to be left quiet for the night.

August 3d.—5 a.m. The symptoms are about the same, but the pulse now numbers only 65. The medicine is acting slightly on the bowels. Apply a blister to the back of the head, and give—

Hyd. Chlor., ʒss, et Pulv. Opii, gr. x.,

every four hours, and rub the spine with Lin. Ammo. Fort.

Noon. The medicine is now acting satisfactorily, the patient is quite sensible, although in other respects the same.

From this date, to the morning of the 6th, scarcely any alteration was perceptible. The blister, although a strong one, took scarcely any effect, and the patient continued in the same helpless state. The pulse has varied from 58 to 70. He has drunk several bottles of gruel daily, and eaten a little lucerne and grass. Frequent but unsuccessful attempts to get up have been made. The general symptoms lead me to conclude that I have a case of paraplegia to deal with, as the brain now appears to be relieved of all congestion, but the hind extremities remain perfectly powerless. Under such circumstances I determine to try the effects of strychnine, although I look on the case as hopeless.

August 6th.—6 a.m. Gave strychnine, gr. ij, which did not produce any effect till two hours after its administration, when the pulse rose to 76, and was accompanied with slight twitchings of the muscles of the nostrils.

Noon. I repeated the strychnine, increasing it one grain, by 3 p.m. the pulse had risen to 80, and slight spasmodic action of the muscles of the fore extremities and of the nostrils had shown themselves. The breathing also was somewhat accelerated.

6 p.m. Strychnine repeated.

9 p.m. Pulse 120, profuse perspiration covers the body,

the spasmodic action of the fore legs is considerable, and the head is somewhat drawn back, but the hind legs remain perfectly motionless.

11.30 p.m. Pulse 110; he appears to be comfortable, the spasms having subsided. To be left undisturbed for the night.

August 7th.—5.30 a.m. The patient is apparently better: he has been quiet during the night, and once or twice has raised himself up and looked round as if for something to eat. A handful of lucerne was offered, which he ate with avidity. The pulse was 90 and soft; the eye sensible to the action of light, but the pupil somewhat dilated; mouth cooler; extremities warm; mucous membranes not so much congested; and the breathing nearly natural. I had now some hope that the strychnine might act beneficially, and therefore ordered the dose to be repeated, combined with Hyd. Chlor., ʒss, and to be administered in thick gruel. About two hours afterwards, all my hopes were unfortunately frustrated, as my patient, in making a violent effort to rise, in which he nearly succeeded, fell heavily down, with his head twisted under the neck, and died almost immediately.

The post-mortem examination, which was undertaken forthwith, showed that the whole of the digestive viscera were perfectly healthy. On opening the thorax, however, I found the lungs to be considerably congested, which was probably caused in part by the length of time the patient had been recumbent. The heart was healthy. On laying open the cranial cavity, a quantity of serum escaped, probably from two to three ounces; but the brain, with the exception of a slight tinge of redness, presented a healthy appearance. It was found, however, to be rather softer than natural, and the vessels at its base were likewise distended with dark coloured blood. The spinal cord, as far as the first lumbar vertebra, was apparently unaffected, but from thence to the coccyx intense inflammation existed. This state of the parts sufficiently accounted for the paralysis which existed during life. I regret that I was unable to make a more minute examination; but the *intense* heat of the weather, and 68 patients in hospital requiring attendance prevented me.

CASE OF LITHOTOMY IN THE HORSE.

By JOHN FIELD, M.R.C.V.S., London.

LITHOTOMY, although now-a-days not perhaps a very rare operation in the horse, is still one so seldom brought to

the notice of the veterinary surgeon, that I think an account of a case which has lately been under my care may not be uninteresting to your readers.

A thorough-bred bay gelding, which had been used as a hunter, the property of a gentleman, was recently admitted into the hospital. The symptoms, as described by the owner, were frequent staling, a gradual wasting away of flesh, and, after violent exercise in the hunting field, the passing of a quantity of blood with the urine. Upon an examination being made per rectum, the bladder having been previously emptied, a calculus about the size of a walnut, could be distinctly felt within the viscus. The owner was recommended not to incur the risk of an operation, if he could get a fair price for the horse; and he was accordingly offered for sale by public auction, but was bought in. It was then decided to perform lithotomy, and the horse having been prepared for the operation, was cast, and secured on his back in the usual way. The penis was then drawn forward with some little difficulty, and the staff was passed along the urethra up to the sub-anal portion of the canal, where it could be distinctly felt. It was then cut down upon, very little hemorrhage taking place, and the forceps being introduced into the bladder, the stone was immediately grasped, but unfortunately in attempting to draw it out it was crushed; however the greater part being removed by the forceps, the remainder was easily washed away by means of a syringe and warm water. The removal of the whole of the calculus being effected, the external wound was brought together with two sutures, and the horse allowed to get up.

After the operation, some urine was passed through the wound for a few days, and subsequently considerable œdema came on of the sheath, but which was relieved by being repeatedly douched with cold water. About a fortnight after the operation, an abscess formed in the sheath; it was, however, not attended with any untoward consequences. Besides the continued use of cold water to the parts, the animal had occasional doses of Bal. Copaibæ given him. He continued, from the period of the evacuation of the abscess, to improve in condition; the wound in the urethra soon became perfectly healed, and the œdema of the sheath was likewise entirely removed, when he was discharged from the hospital. Under such favorable circumstances as these, I hope soon to have the pleasure of seeing his owner riding him again to the hounds.

CRIMEAN RETROSPECTS.

By G. FLEMING, M.V.C.E.

THE perusal of your leader in the January number of the *Veterinarian*, induces me to respond to the appeal made by you to those of the profession who have spent a portion of their time in the Crimea. For this purpose, I have collected a few stray notes and observations made during my six months' sojourn in that region. But, as you have justly remarked, it is to those who "did the work and bore the brunt," in the early part of the campaign, that we must look for much of that valuable kind of information not to be acquired in time of peace, and which the daily increasing demands of the science, and the natural desire for advancement, which is, or at least ought to be, a part of our natures, requires at their hands.

I have said nothing of that most potent and prevalent of all the then existing maladies, *mange* with *debility*, for in my opinion it is worthy of a separate communication, and its consideration at this time might recall anything but agreeable reminiscences to the memories of those who had much to do with it. But, there was one fact which I have observed, and which I think too remarkable not to be noticed, as it tends to substantiate what many must have witnessed; namely, the close analogy which often can be traced between epidemics and epizootics, when they make their appearance simultaneously, and arise from the same exciting causes.

The months of February, March, and beginning of April were particularly severe, and I found my number of sick animals increase in spite of all my efforts; for the camp was exposed on every side to those cold winds, and Black Sea fogs, which were so obnoxious to man and beast, and besides, the greater part of the animals were picketed in mud, and without the least shelter.

At the foot of the slope, on which stood my sick lines, was a graveyard used by the French general hospital, close to the English head-quarters, for the interment of their dead. At this time, the French troops suffered severely from typhus and cholera, for they were young, unacclimatised, badly fed, and as badly sheltered. Disease did its sad work amongst them, and thousands thus perished ingloriously, never more to return to *la belle France*.

From early morning until evening, the toil of burial went on in this place, but only on particular days; some days few

being interred. Weather had apparently not so much influence; for after a change in the direction of the wind, or during a close stagnant condition of the atmosphere, there were more deaths than during or after a storm. Now on those particular mornings, when, on looking out from my tent, I saw our French neighbours busy at work, as sure was I to find a large mortality amongst my patients, and so long as I had a number of sick, this was always the case. And even the diseases had points of resemblance in their low typhoid character, the rapidity with which they terminated in death, and their being almost beyond the influence of medicine. Their pathology, too, was similar, in their evidently depending on some morbid poison circulating in the blood giving rise to, in my patients, ulceration of the mucous coat of the intestines; the deposition of miliary and confluent tubercle in the lungs and numerous skin affections of a malignant character; while a fearfully large number were attacked with glanders and farcy, which terminated in death in two or three days.

The progress of wounds or injuries also indicated a vitiated state of the system; for no matter how slight they sometimes were, they were certain to assume a phagedenic condition, and spread over a large extent of surface in a short time; indeed, there appeared to be a tendency towards breaking up of tissue on the slightest aggravation.

When the warm weather set in they were still more unmanageable, and I had many opportunities of confirming in my own mind what M. Renault has stated to be one of the causes of traumatic gangrene,* namely, "the contact of putrefying blood in or upon a wound." In those desperate cases of fistulous withers, where the only chance lay in obtaining a wide dependant opening, and in wounds caused by the removal of tumours, or in any operation where much hemorrhage was unavoidably produced, sloughing was certain to follow if the effused blood was not always removed; and when this could not be done, gangrene was the prelude to the death of the animal. There appeared to be an inability generally, to form healthy pus, hence circumscribed abscesses were not often met with, for the fibrinous wall appeared too weak to withstand the corroding influence of the thin, fetid pus. Cicatrization was feeble, and could only be attained by scrupulous cleanliness, the application of stimulants, gentle and equable pressure, and paying as much attention to the general health as it was possible to do under the circumstances. Without any assignable cause, large patches of

* 'Gangrène Traumatique,' Paris, 1840.

skin would slough from the sides of the neck, back, and loins, which was difficult to prevent spreading; and in these cases, the actual cautery was found an excellent remedy, as by its free application a healthy inflammation immediately followed.

Those pests, the Crimean flies, were often the cause of wounds assuming an unfavorable aspect. It was astonishing how, in the short space of two or three hours, a healthy granulating wound, advancing favorably towards cicatrization was changed to a large and gaping opening, presenting a mass of putrefaction, with a most offensive odour, and a scanty secretion of sanious pus.

FROST-BITES.

Under such exposure to the weather, with a weak and imperfect vital action, caused by change of climate, food, and want of being properly cleaned, it need not be wondered at that *congelation* was of frequent occurrence among the horses during the winter. I was often surprised to find the frost-bites generally in a very mild degree, for with the exception of one case, which I shall relate, the skin of the heels, and most frequently of the hind feet, was the only part of the body which suffered from this cause. When it is considered, that the majority of the animals were brought from Spain and Genoa, and many of the former had their bodies foolishly robbed of that natural protection, the hair, before they were sent from Spain—that they were suddenly brought into contact with a winter, the inclemency of which only a polar bear could manage to survive; that they were without proper shelter, the greater part of them standing or lying in cold wet mud; that snow and sleet were drifting over their backs, and that the moisture on their limbs was frozen, thus forming a rigid envelope, under which vitality must have had many a hard struggle to maintain itself; when we consider all this, we are only the more led to admire the wonderful conservative powers with which nature has endowed the animal economy, by bestowing a powerful and active circulation, and those innate qualifications which enable it readily to adapt itself to the altered circumstances in which it may be placed. Every precaution had to be taken to avoid this mishap, not only amongst the healthy working animals, but with the sick; for, if a poultice was applied to a lame foot or limb, and the frost set in, when the poultice was removed large fissures would be found in the skin, between which, sloughing soon took place; the limb also began to swell, and the animal to evince acute pain upon the

slightest movement or touch. For a time, poulticing and wet applications had to be altogether dispensed with, in consequence of their lowering too much the natural temperature. When properly managed, these sores generally got well, though slowly: but if the exciting cause was still kept up, the integuments around the pastern would become destroyed, and finally the hoof would be separated, in consequence of the implication of the coronary substance; and then the animal's fate was sealed.

Quittors were the most frequent disease which owed their production to frost-bites. The treatment was mainly directed to the exciting a strong and healthy vascular action; at the same time protecting the parts from the depressing influence of the cold air. For this purpose, I found the compound tincture of myrrh and aloes, conjoined with moderately firm bandaging, the most successful.

The only extensive case of frost-bite, that I had, occurred to an animal, one of the camp slaves, which was employed to convey water from a ravine close to the Turk's Hill. In snowy or wet weather, the mud reached almost to the water-bags which it carried. On one of the days in March, it had been at its usual duties until the evening, when a stern frost setting in, after a day's snowing, the poor brute was put into its cold corner untouched, not so much as the mud having been scraped from its limbs, for the man in charge of it was glad to seek his hut.

On looking round, towards ten o'clock at night, I found the poor creature in a miserable plight, being literally frozen stiff; the legs were immovable, ice covering them to the elbows and stifles, while from the belly depended icicles some four or five inches in length. No time was to be lost, for I dreaded the worst, and humanity dictated that every effort should be made to avoid gangrene.

The vital powers were ebbing fast, showing that unless prompt measures were taken, all treatment would prove to be too late. Diffusible stimulants were administered; cold water was employed to wash down the body and legs, an operation which occupied some time; four men were also put to work, to dry, and rub the whole of the body. The animal was then gradually shifted to a warmer corner of the shed, and the limbs were bandaged, and the body clothed. In spite of all this, the limbs still remained cold, the hind ones were especially so, and insensible. The pulse was weak and irregular, with, at intervals, a sort of sighing in the respiration, resembling hickup.

A very mild stimulating liniment was, in the morning, applied

to the limbs, and the exhibition of stimulants internally still kept up. The improvement was marked, but the limbs were becoming much engorged and their natural heat was returning very slowly. The limbs were often hand-rubbed, the bandages made a little tighter, and bran-gruel was given. In the afternoon, great thirst was manifested; the pulse became much stronger, and the limbs also were becoming very warm. Being very busy with my other patients, I could only see this one twice a-day, though I was much interested in it.

On the evening of the second day, the skin on several parts of the limbs became loose and baggy to the touch. On the third day, extensive sloughing resulted, leaving large cavities, from which profuse bleeding took place. Pledgets of dry tow, with bandages, constituted my treatment of these sores. In two days more, three of the limbs also were in a gangrenous state, especially around the fetlocks and coronets. Irritative fever ran high, and seeing no use could follow the prolonging of the sufferings of the animal, I came to the conclusion to have him destroyed, as everything was against a cure.

GREASE.

This was another of our vexatious diseases, induced by the cold and wet. I never saw any cases of it run on to that chronic stage in which we have excrescences formed. It never got beyond the ulcerative stage, and this is its most troublesome one. Warmth, dryness, and the application of some desiccant to the inflamed surfaces, was the only successful mode of treatment; for poulticing, as I before mentioned, was unsafe. Powdered quicklime I found an excellent remedy, and one easily applied. Liquid dressings did more harm than good.

PROLAPSUS ANI.

March 25th.—This forenoon I was hurriedly sent for to see one of a number of Spanish mules on detachment at the monastery of St. George, about three miles from my camp. On my arrival, which was not until the afternoon, I found the animal suffering from a rather formidable protrusion of the rectum. The stable orderly informed me that he had been left quite well on the previous evening, and in the morning he had been found with about a foot of the intestine exposed. He was also straining as much as he could, thus of course making bad worse.

These accidents were of frequent occurrence amongst

the mules, but they always did well after being reduced. How they were occasioned could not be positively ascertained; but much was ascribed to some little peculiarities in the habits of the animals, especially when a number of them were kept close together. In the present case, nothing in the form of a scratch or wound could be discovered to account for its production. About eight or nine inches of the gut was in a state of gangrene, and covered with straw and mud; the animal getting up and lying down with great uneasiness.

There being no means of having anything done for him where he then was, I had him at once sent over to my sick lines. On his arrival there I determined to amputate the whole of the mortified intestine, and for that purpose I had it first washed with tepid water, and the *fæces* afterwards removed as well as an opening scarcely wide enough to admit the little finger would admit of.

The idea of returning it was never thought of, for such a thing was impossible, and the parts were evidently lost to all vital action. So, therefore, securing the animal in a standing position, I commenced the operation by passing a needle—about fourteen inches in length, armed with a double ligature of strong silk, well waxed—through the mass close to the anus. Cutting this ligature from the needle, I firmly tied the ends of each thread together around the protrusion, thus entirely circumscribing it, but at the same time allowing of the opening into the intestinal canal being a little wider than before the operation. Care of course was necessary to have each thread well secured to its own side, otherwise the ligature was worse than useless, and would have entirely frustrated a favorable result.

To moderate the straining, which was very great, I fastened a tight girth around the abdomen, and used frequent injections of tepid water, olive oil, and an aqueous solution of opium. Opium was also administered by the mouth; nothing else, however, was given, except sloppy bran mashes, as I imagined the action of a purgative or even a laxative would only have increased the peristaltic action of the intestines, and induced more straining.

During all the next day my patient was very restless,—getting up and lying down as if frantic from pain. Twenty-six hours from the time when I first applied the ligatures, I had the animal again secured, and with a bistoury removed the whole of the substance close to the ligatures. Next morning these, by gentle traction, came easily away, and scarcely any bleeding followed. I had also a compress or kind of truss made to fit

the parts, for the twofold purpose of preventing any further protrusion of the intestine, and of keeping cold water dressings constantly in contact with the anus. This same evening the animal fed well, and in a week he was able to go on duty to Kazatch, and towards the end of June he was embarked for Trebizond in splendid condition. I thought the more of this fortunate termination of the case, as my commanding officer recommended the animal to be immediately destroyed when he first saw him.

FRACTURE OF THE NAVICULAR BONE.

On the 9th July, 1856, Mr. Irvine, a gentleman on the commissariat staff at head quarters, sent for me to look at a pony which he had that day taken to Balaclava, and when returning up the ascent close to Mrs. Seacole's, a heavy barrel happened to tumble off a cart going on before him, and struck the anterior part of the animal's near fore foot. The pony was taken home very lame. When I examined the foot, I found nothing beyond a slight bruise immediately above the coronal process of the os pedis; an injury not nearly sufficient to account for such an amount of lameness. I suspected something very serious, but the hour being late, I deferred giving an opinion until the next day, and merely ordered a cold poultice to be applied. The result of a minute investigation, on the following morning, only confirmed me as to a grievous lesion existing within the hoof, but its seat could not well be decided upon. There was an intense heat in the foot, and the slightest movement gave rise to symptoms of acute pain.

As all our horses were to be embarked next day, the head quarters being about to be given up to the Russians, I saw little hope of anything being done for my patient, and therefore I had him immediately destroyed.

On examination after death, I found the navicular bone fractured into three large, and about half a dozen small pieces. With the exception of the inflammation set up in the bursal sacs, since the occurrence of the accident, no other lesion was perceptible; the articulation between the second and third phalanges being perfectly healthy, and even the coronary substance and perforans tendon—parts which we might have supposed implicated—at least, they exhibited little to account for such a serious solution of continuity having taken place in their immediate neighbourhood.

There is something peculiar in the production of a comminuted fracture of the navicular bone, resting as it does on such elastic materials as the perforans tendon and elastic

frog, and which I think can only be rationally explained by saying that the re-percussion is communicated from before to behind, and that only a smart blow will produce it. In this case the *os pedis* had not the slightest appearance of being injured, and yet it must have been the medium through which the jar was thrown upon the navicular bone. When the blow comes obliquely, the *os pedis* then, in the majority of cases, suffers. Mr. Gloag informs me, that in the cavalry charge at Balaclava, a horse was struck on the foot by a bullet which, carrying away a small portion of hoof, fractured the coffin-bone. Here we can imagine the bullet striking the hoof obliquely, thus causing as it were a diffusion of the concussive force, and as there was no other bone or bones to modify or diminish the shock, the result was a dissolution of its continuity.

The foregoing case of the pony was the last of our veterinary experiences in the Crimea, as all fit animals were embarked on the next day.

HÆMOPTYSIS.

On the afternoon of June 4th, I was told that a horse had fallen with his rider on the Kamiesch road close to my camp, and that blood was gushing from his nostrils. On my reaching the spot, I found that, with the assistance of some artillerymen, the horse had been got up, and now stood with his head close to the ground; a small stream of blood trickling from each nostril. The breathing was very hurried and deep; the skin of the body and limbs cold and bedewed with a clammy sweat. The symptoms altogether betokened acute congestion of the lungs, and plainly indicated that unless something was soon done, the animal would speedily die.

From his rider, Captain G., of the artillery of the Imperial Guard, I obtained the following history: The horse was of the southern breed—French—and had only been in the Crimea a short time, he had not been accustomed to much work, and was therefore in gross condition. That forenoon he had taken him from the camp close to Traktir bridge to Kamiesch; that a heavy shower overtook them on their return, and that he had pushed the horse forward as much as he could until all at once he began to stagger, swayed to one side of the road, and then fell, blood freely flowing from his nostrils.

I had him conveyed as gently as possible to a shed where a loose box was partitioned off for him. When put in he appeared comatose, perfectly insensible to everything around him, boring forward with his head against the wall, although not attempting to lie down.

Twice he coughed, when blood came from his mouth. The hæmorrhage was not alarming, though, in conjunction with the other symptoms, there was enough to be dreaded.

I had him bled to the amount of six quarts, or until the pulse, which was before full and oppressed, had become more quickened but diminished in volume.

The other measures consisted of the exhibition of opium, acetate of lead, and frequent small doses of nitrous æther. Cold affusion to the head, clothing and bandaging the body and limbs were resorted to, and after making him as comfortable as we could, we left him for the night. Next morning he was better, and I substituted for the other remedies, sulphuric acid, very much diluted with water. He partook of a little bran mash in the forenoon.

In the course of the two following days he recovered amazingly, and was often visited by M. Charbonelle, the veterinary surgeon doing duty with the battery to which the horse belonged. He was soon able to travel to his own camp, where I had an opportunity of seeing him frequently, and no further harm appeared to have arisen from this event, than a slightly increased secretion of saliva, caused by the first dose of sulphuric acid not having been sufficiently diluted. In less than a month after he was embarked for France.

VOMICÆ SUPERVENING ON INFLAMMATION OF THE BOWELS.

By W. D. BRAY, V. S., Broughton-in-Furness.

On the 26th of August, 1856, I was requested to attend a bay mare, half bred, about 15½ hands high, and eleven years of age, belonging to Mr. J. H. Case, miller, of Broughton Mills.

Upon inquiry I ascertained that she had worked well on the previous day, and was fed as usual with the other horses at night; but that, in the morning, she refused her food, and gave indications of abdominal pain, and that the owner, thinking she was *griped*, had given her a pint of gin, and abstracted two quarts of blood.

I saw her at 5 p.m., when I found her standing, but evidently in pain. The mouth was particularly hot and dry, the conjunctival and Schneiderian membranes were injected; pulse 75, small and wiry; breathing accelerated, and the extremities cold.

I at once removed about two quarts more of blood, and

afterwards administered a dose of laxative medicine. I also examined her per rectum, and succeeded in removing some excrement, which was very much hardened, and coated with mucus. Enemas were thrown up, but they soon returned in a colourless condition. The abdomen was fomented with hot water, which was ordered to be continued without intermission. The legs were bandaged, and instructions given for the enemas to be repeated every two hours.

27th.—6 a.m. The mare is evidently worse. The pulse is irregular and oppressed; the mouth, tongue, and extremities, are deathly cold, whilst the body is bedewed with a profuse perspiration. She lies down suddenly, and rolls from intense pain, and looks piteously at her left side. No fæces have been passed, and but a small quantity of urine, which is very high coloured. Some more aperient medicine was given; the enemas repeated, and a stimulating embrocation applied to the abdomen.

7 p.m. The symptoms are even more aggravated than in the morning; the pulse is 90, but very irregular in its action. I ventured on another bloodletting, removing about four quarts, which considerably lowered the pulse. I also blistered the chest and abdomen, and ordered the medicine to be repeated as no dung had yet been voided.

28th.—9 a.m. My patient is improved; she has dunged and also urinated during the night. The extremities are warmer, and the pulse is reduced to 60. She looks more lively, and has taken a little meal and water. Instructions were given for her to be well rubbed, and then warmly clothed, and walked out for a little exercise. The medicine is operating freely. Some vegetable tonics in combination with astringents were given, and plenty of thin gruel and linseed tea placed within her reach.

29th.—8 p.m. I found that a relapse had taken place. The respiration is quick and short; extremities cold; eyes moist; Schneiderian membrane of a scarlet colour, and the pulse numbering 95 in a minute. She stands with her head resting on the manger, and with her fore legs apart. She has no appetite. The fæces are rather hard; her countenance has a remarkably anxious expression; the nostrils are expanded, and she has also a short dry cough. I was somewhat surprised at this change in the character of the disease, and informed the owner that the case was a hopeless one, peripneumonia having set in. At his urgent request, however, I continued my attendance daily until her death.

It is not necessary that I should enter into particulars of the subsequent treatment, more especially when I say that

the case was prolonged until the 21st of September, by which time she had sunk into a most deplorable condition, the cough being almost incessant and very distressing. A great quantity of fetid matter also was daily evacuated from the mouth and nostrils.

Post-mortem examination.—The mucous membrane of the intestines was much thickened, more particularly within the cæcum, from chronic inflammation. The diaphragm was likewise very dark coloured, and the chest was filled with fetid matter. The parenchyma of the lungs was reduced in places to a pulpy mass, and the trachea was filled with a purulent fluid.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

(Continued from p. 36.)

SALIVARY SECRETION. — In analysing M. Claude Bernard's work, I last month proceeded as far as the comparative study of the special and differential characters of the secretion of each salivary gland. Our author next examines the mixed saliva which is the product of all the buccal glands. It contains—1st. Water; 2d. Organic matters, viz.—*albumen, casein, epithelial scales, a little fat containing phosphorus* (Tiedemann and Gmelin), *mucus, a peculiar organic principle*. 3d. Inorganic substances, consisting of *alkaline carbonates, earthy phosphates, chlorides, sulphates and lactates*, and lastly the *sulphocyanide of potassium*. The existence of the latter body has given rise to much discussion among physiologists, many of whom have admitted its existence, such as Tiedemann and Gmelin, Wright, Mitscherlich, Dumas, Lehmann, &c. It, however, appears to exist there in virtue of chemical action under special circumstances.

Besides the different kinds of saliva, there exist other distinct fluids with which the saliva is mixed in its passage from the mouth to the stomach, such as the nasal, lachrymal, and pharyngean fluids. M. Riquet has performed many experiments on the secretion of the mucous membrane lining the pharynx, and it appears that such secretion is very abundant, amounting, in the horse, to two gallons in the 24 hours. It is intended to aid in deglutition.

Respecting the uses of saliva, M. Bernard has concluded, from many ingenious experiments on the horse, that it performs a purely mechanical office; the drier the aliments the greater the amount of saliva secreted during mastication and required for deglutition. Bernard establishes, 1stly, that dry provender absorbs about four or five times its weight of the mixed fluids that enter the mouth; 2dly, that dry feculent food, such as oats and barley, absorbs a little more than its weight of mixed saliva; 3dly, that green food takes up a little less than the half of its weight of the same liquid; 4thly, and lastly, the worst form of feculent food, such as moist bran, &c., do not take up any noticeable amount of saliva. The quantity of saliva varies according to the length of time engaged in the mastication of food.

M. Bernard has sought by experiment to confirm or refute the opinions emitted by certain chemists respecting the peculiar action of saliva on starchy matters, converting them into dextrine and grape sugar. He finds that this property is not enjoyed by the pure secretion of any of the salivary glands taken alone, but that it belongs to the mixed saliva and other organic fluids, though these may be morbid products. The diastase of the saliva appears, therefore, to owe its existence to the decomposition of the ptyaline and of other products found mixed with the saliva. This appears established as a fact by the strange observation made of the more speedy conversion of starchy matters by the saliva when the mouth is the seat of inflammation. Moreover, the contact of starch with a mucous membrane suffices to determine this transformation; and M. Bernard believes, therefore, that the chemical action of saliva is an accidental rather than its essential use. And, adopting the views of the ancients, he considers the saliva to have a purely mechanical office to perform.

M. Colin must next engage our attention as the results he has arrived at by experiment differ in some small particulars from those of Bernard. Such differences may and do doubtlessly depend on the fact that Bernard has studied the salivary secretion in the dog and Colin chiefly in the horse and ox.

The secretion of the parotid is said by Colin to be entirely suspended in the horse during the period of abstinence, but that in ruminants it is continued even when food is not taken into the mouth.

On the submaxillary secretion, Colin's account agrees with that of Bernard; but he alludes to a distinctive character in the ox, viz., to its suspension during the second masti-

cation, when the food is returned to the mouth from the rumen

With reference to the sublingual saliva, Colin says that it is more dense and viscous than that of the submaxillary glands, so much so that it almost appears to be pure mucus. The sublingual gland secretes continuously and not alone, as Bernard has advanced, during the process of deglutition. The amount of the sublingual saliva is increased under the influence of excitants.

M. Colin attempts to show that his results differ widely from those arrived at by Bernard, but I cannot see that there is any important or material difference in the opinion of the two experimenters, except as to the chemical action of the salivary secretion.

Bernard has classified the salivary glands according to their physiological peculiarities, and this appears to me most rational, whereas Colin has adopted Duvernoy's classification of these glands into an anterior and a posterior set. The anterior secrete the viscid secretion, and the posterior simply the watery fluid.

Further experiments are required on the subject of the action of saliva on amylaceous food, and Colin says that its purely mechanical office cannot be admitted. The fact, that animals become emaciated, and get into a state of marasmus when affected with fistulæ of the parotid ducts, indicates, according to Colin, a great change in the process of nutrition, and he is inclined to look on the condition as dependent on the incomplete changes of the food when not acted on by the salivary secretion.

DEVELOPMENT OF AIR IN THE BLOOD.—Stockfleth has described a peculiar case of development of gas in the blood of the horse, the remarkable features of which were analogous to such as have been witnessed in man according to the writings of Cless. The horse had been driven in harness, and was observed to be somewhat dull; on returning home his appetite was diminished, but still no decided disease presented itself. The following morning the horse was found dead in his stable, and no noise had been heard during the night. At midday the body was examined, and found fat, all the veins were filled with black fluid blood and air-vesicles; besides which, ecchymoses existed in the mesentery, in the intestine, &c. On cutting into the liver and lungs, blood flowed out mixed with air. The right cavities of the heart were expanded and elastic on pressure, and on piercing them the air passed out with a hissing noise; in the left side of

the heart there was little blood and air. The endocardium was of a dark red colour. In the arteries there was no air, and there was no morbid alteration observable elsewhere. Stockfleth concludes that the horse died in consequence of development of gas in the veins, and accumulation of the same in the right side of the heart. It is well known that the entrance of air into veins is a very dangerous and often fatal accident, although a correct explanation of the cause of death is still wanting; sometimes a horse may receive a considerable quantity of air into the veins without dying.—*Tidskrift för Veterinairer*, vol. iii, Copenhagen.

The case spoken of by Stockfleth is a very remarkable one; but there is, so far as we can see, proof wanting to demonstrate that gas was developed in the blood during life. Admitting the existence of this gas, a question presents itself as to whether it acts in inducing death like air introduced into the venous system. The explanation of death from the latter cause is sought for as a physical phenomenon; whereas, when a gas is formed, it may be poisonous like sulphuretted hydrogen. Gas, it is true, is disengaged before death in the subcutaneous cellular tissue in certain maladies, and it is looked upon as a sign of incipient decomposition; perhaps the gas occurs in the blood under the same circumstances. I have not unfrequently seen vesicles filled with gas in the blood of dogs, but only some time after death; and on microscopic examination the blood was found crystallized, indicating that changes of a very important kind had occurred since the animals had expired. I have, moreover, only seen this after having injected putrid water into the animals' veins.

The heart in Stockfleth's case was found distended with gas; to bear on this fact, as proof of the possibility of gaseous development during life, it is said that in attempting to kill animals by blowing air into their veins, much air may be introduced before the desired end is attained. It must be borne in mind, that sometimes this operation is not very carefully performed, and the tube used for insufflation, instead of entering the vein, finds its way into the cellular tissue, and many mistakes have arisen from this accident also in the act of introducing agents into the blood.

STURDY IN CATTLE.—No less than seven bladders of the cœnurus were found in the left hemisphere of the cerebrum, in an old cow affected with sturdy. Between the dura mater and the cranial parietes there were several transparent vesicles about the size of a pea, imbedded in the substance of the bones. The left hemisphere of the cerebrum only weighed

three drachms, and a scruple less than the right, although the former contained all the bladders. Hering could not find any heads of the *cœnurus* on the interior of the sacs, and he held them to be yet undeveloped hydatids.—*Repertorium für Thierheil*, p. 21, 1855, Stuttgart.

In the second volume of the *Milan Veterinary Journal*, at page 52, is a case of sturdy recorded by Patellani; it occurred in a two-years-old animal, that had shown for several days attacks of madness, and in one of these it had broken a horn off. Patellani found her lying senseless on the ground, the head bent on one side, the forehead hot, painful on percussion, the sound produced hollow. On examination after death, the membrane of the brain was found injected, and in the right ventricle of the cerebrum were hydatids with several heads.

The trephine has of late years been much recommended in cases of cerebral hydatids in cattle; and in Bavaria and Wurttemberg it has frequently been employed, and often with good results. At the Clinique of the Munich Veterinary School, in the month of November, 1854, a year-old heifer was presented with expansion of the right frontal bone; there were symptoms of giddiness with turning towards the right side, dulness, &c. Ramoser found, on percussing the seat of the disease, that the sound was most hollow to the left. The case was observed for forty-three days, during which time the symptoms became more severe; the animal was trephined, and about two ounces of serum passed out, followed by the bag of the parasite. The wound would have been closed with a clay plaster, but the animal had to be slaughtered the following day. The membranes of the brain were inflamed, especially to the right, and blood was extravasated on its surface: the expansion, thinning, and even perforation of the upper part of the right lateral ventricle, showed that the bladder was lodged in the ventricle itself, as had been seen the previous year, in another case that had been operated upon. Death was then attributable to the far advanced stage of the malady, and to the abrupt collapse of the parietes of the ventricle, after contraction of the bladder.—*München Jahresber*, for 1854-55, p. 13.

Hydatids occur much less frequently in the brains of cattle in Great Britain than in other countries, as Youatt has correctly said, in his treatise on the ‘Diseases of the Ox.’ It occurs only in the young animal. Indeed, it obeys the same laws that guide the development of the *cœnurus* in the sheep, and it is a well-established fact that it is only when animals are growing that the germs for the propagation of

the bladder worms will be taken up, and carried to parts probably through the blood.

The success attending the trephine in cases of bydatids in the brain of the ox, is very great and encouraging; and not only have I read interesting and convincing records on this subject, but, in conversation with skilful and experienced veterinarians, I have learned that trephining is an operation often to be relied upon.

LARVÆ IN THE BRAIN OF A FOAL.—Professor Brückmüller gives a very precise account of this very strange case. It occurred in a year-old foal that had been quite well until shortly before the professor saw him, when he was affected with dreariness, turning constantly to the left, and other symptoms; he held his head awry, the right side being uppermost; the left eye was half closed, the globe of the eye was drawn to one side, the pupil dilated and immoveable; the neck was bent to the left; in uplifting the deeply sunken head the animal plunged backwards; in progression he tumbled and staggered, and fell mostly on the left side; he could not well bear to lay on the right side; there appeared no disturbance of the pulse, respiration, digestion, or even of the sensory function. The animal was killed after having been observed for five days. On opening the skull there was found accumulation of blood; and just on the left cerebral peduncle, in front of the pons varolii, was the larva of an insect, twelve lines in length and three in breadth, and so deeply imbedded in the substance of the brain, that the rings of the larva are well marked on it; a similar but empty cavity is met with deeply situated in the pons varolii. It encloses broken-up brain substance and fluid blood. Two other cavities, similar to the foregoing ones, one only of which contains the larva, are observed above and on one side in the brain substance; there were no alterations in the blood-vessels and membranes of the brain. In the stomach there were bots besides other worms, but in the left frontal sinus there was a thickened, darkish spot on the mucous membrane, perforated by small holes. It is probable that both bots were originally attached here, then they attained the throat, and from there they passed into the vessels of the neck, into the cranial cavity, and were carried to the brain.—*Vierteljahr für Wissenschaftliche Veterinärkunde von Dr. Müller and Röhl*, vol. vi, p. 48, Vienna.

21, DUBLIN STREET, EDINBURGH; Jan., 1857.

(To be continued.)

Facts and Observations.

VETERINARY SURGERY IN MOROCCO.

WE are indebted to Professor Spooner for the following extract from a private letter received by him, which shows the state of our science on the north-west coast of Africa: "The horses here are rather small, but when properly treated are very good animals, and I have been astonished at the manner in which they get over rough ground. They seem to me to be able to go through anywhere so long as their bodies can pass; and I have been through places, both in going down sand hills and up the sides of stony mountains upon them, which, unless I had seen others do it before, I should not have believed it possible. I am also the more surprised at the facility at which they go over rough and stony ground, when I see how slightly they are shod. I have procured a set of shoes to show you the system of shoeing, which is altogether different from the English, inasmuch as the toes are cut quite square. I have also obtained a bridle, so that you may see what a powerful bit is used. The saddles and stirrups are made in the old Spanish fashion, and are too cumbrous by half; but they are comfortable when you are accustomed to them. I must confess, however, I very much prefer the English saddle, both for use and appearance.

The horses are hardy beasts, and so they need be, as they only get a feed of corn (barley) at night, with a few handfuls of broken barley straw during the day, and water but once in the day. Sometimes they are washed in the sea, but as to grooming, as I understand the word, this they never get.

There are veterinary surgeons here as well as in Europe. I was very much amused one day, when riding with Mr. C— on the beach, by an old man who came to us and said there was something the matter with the horse I was riding, and that if I would give him an ounce ($2\frac{1}{2}d.$), he would tell me what it was and how to cure it. He said his fee was always two ounces ($5d.$), but as he knew Mr. C— he would only ask for one. For the fun of the thing I gave him his fee, and demanded his opinion. He had previously looked the horse round, and I had walked him backwards and forwards, and after pocketing his twopence-halfpenny, he said, the horse has been hurt on the off hind leg, pointing out at the same time the place, which was just below the stifle-joint. Mr. C— had previously noticed that after a long gallop on

the sands the horse had gone a little stiff with that leg, and now on touching the part he winced.

We afterwards made inquiry of the gentleman to whom the horse had belonged, the French Consul, and ascertained that some months ago the horse was wounded in that place by a wild boar, and as he was at that time *en route* from Tangiers to Mogadore, the wound was not perfectly healed, as he had no time to rest him. So you see, the old man was right in his diagnosis, and knew, I suppose, something about horse-flesh, as he had certainly never seen the animal before. His remedy was to 'fire' him; but that was not done.

This firing seems to be a very general remedy, and except a dose of rancid butter as a purge, they seem to have few medicines. They give the seed of wormwood as a specific for worms, and, as far as I can understand, seldom or ever bleed their horses. At this I am surprised, as they often bleed themselves, or are bled, and also apply the firing iron to their own persons. Indeed, it seems to be quite as common a thing to fire a man's leg as that of a horse, and I have seen men with the marks of the firing iron on their faces.

"Horses are much valued here, and the Sheik of a district, about twenty miles from Mogadore, whom I visited, showed me one of which he was very proud, though it looked rather thin; but this I did not wonder at, when he explained that a few days before he had ridden it all the way from the city of Morocco, more than 100 miles, without stopping on the road to feed it."

SALT MILK.

THE attention of the medical profession has recently been directed to the circumstance that the milk of some nursing females contains such an appreciable quantity of salt as to be cognizable to the taste. In the *Union Medicale*, "M. Trèves relates the case of a lady who had been hitherto unable to suckle her children, but determined to try anew with her next. As there was no perceptible obstacle the child was put to the breast, but always showed the greatest repugnance to sucking. Persevering in the attempts for a few weeks, the child was found to waste away. On examination the milk offered no peculiar appearance, but on tasting it, it was found intensely salt, like brine. A nurse was procured, and the child soon rallied."—*Medical Times*.

[We quote this case chiefly for the purpose of relating a similar instance as occurring in the cow. A few weeks since,

we purchased a thorough-bred short-horn cow, for dairy purposes. She was in excellent condition and had every indication of health, but being far advanced in pregnancy she gave but little milk. The first time her milk was brought to the dairy, it was discovered to have a remarkably salt taste. Nothing was said about it at that time, but a few mornings afterwards, some of it was purposely placed before us on the breakfast table. This we used in the ordinary proportion to our coffee, and on drinking it immediately exclaimed that some salt was mixed with the coffee, the saline flavour being so perceptible. The full particulars were then told us. Instructions were given for the cow to be dried, which being done, she was shortly afterwards sold.

On relating the circumstance to some friends in the presence of Dr. Aitkin, we were informed by him that during his residence at Scutari, where he had gone as *First Assistant-Pathologist* to Dr. Lyons, to report on the diseases of the army in the East, he could only obtain the milk of goats for ordinary use, and that he was unable to drink it in consequence of its briny flavour. He gave orders that no more should be brought, and on complaining to the purveyor, he learned that the goat had just given birth to two young ones. Perhaps some of our readers can furnish us with additional cases of this kind, and also inform us whether pregnancy or recent parturition has any direct connection with this saline condition of the lactiferous secretion.

THE COMPOSITION OF MILK AT VARIOUS TIMES OF THE DAY.

PROFESSOR BOEDEKER has analysed the milk of a healthy cow at various times of the day, with the view of determining the changes in the relative amount of its constituents. He found that the solids of the evening's milk (13 per cent.) exceeded those of the morning's milk (10 per cent.); while the water contained in the fluid was diminished from 89 per cent. to 86 per cent. The fatty matters gradually increase as the day progresses: in the morning they amount to 2.17 per cent., at noon to 2.63 per cent., and in the evening to 5.42 per cent. This fact is important in a practical point of view; for while 16 ounces of morning's milk will yield nearly half an ounce of butter, about double this quantity can be obtained from the evening's milk. The casein is also increased, in the evening's milk, from 2.24 to 2.70 per cent.;

but the albumen is diminished from 0·44 per cent. to 0·31 per cent. Sugar is least abundant at midnight (4·19 per cent.), and most plenty at noon (4·72 per cent.) The percentage of the salts undergoes almost no change at any time of the day.—*Henle's Zeitschr. für Rationelle Medicin.*—*Edinburgh Medical Journal.*

LONDON MILK.

DR. HILLIER, in a recent report on the sanitary condition of St. Pancras, says: "The most emaciated and least healthy cows often yield the largest quantity of milk. The diseases most frequently fatal to the cows are said to be consumption and inflammation of the lungs. We know that infants suckled by nurses who are consumptive are liable to become consumptive, and there can be little doubt that infants fed on milk from consumptive cows are likely to fall victims to the same disease. Thinking it possible that the poorness of the milk might be entirely due to the manner in which the cows were kept, I obtained milk direct from the cows at one of the most unhealthy sheds that I could find; and, to my surprise, the milk, though not so good as country milk, was very far above the average of that sent out. There can be no doubt that the practice of adding water in large quantities is a very common one; the quantity employed, is, I believe, from 25 to 50 per cent. As far as my researches have extended, it is not common to have any other ingredient added than water; this, however, is a fraud which ought not to be allowed. The amount of cream varies much, even in specimens that have not been adulterated, but just as they come from the cows; this is much affected by the food and condition of the animals; but the specific gravity of the serum, and the amount of solid matter, are much more constant, and are, without a complete analysis, the best guides to the purity of the milk. There is one point worthy of notice, that may assist the public in judging of the milk sold to them, it is this, that the very rapid rising of cream to the surface of any specimen of milk, so far from being a proof that it is pure milk, is generally an indication that it contains water. For it will be found that milk to which water has been added will have a much thicker layer of cream on its surface after standing about twenty minutes than pure milk has under the same circumstances. It is to be feared, that in some cases, water is added by the dairymen, not only to dilute the

milk, but also to hasten the separation of cream, so that they may be able to obtain some from the milk before it is sent out to be sold. Thus this most important article of diet is impoverished, not only by keeping the cows in an unhealthy state, but by the addition of water and removal of cream."—*Medical Times*.

RUPTURE OF THE HEART OF A DOG, CONTAINING FILARÆ.

At a recent meeting of the *New York Pathological Society*, Dr. W. C. Livingston presented the heart of a Newfoundland dog, supposed to have been killed by leaping from a window in the fourth story of the building in which he was usually kept. He was found early one morning, on the walk directly opposite, dead. As he was always regarded a healthy and a remarkably intelligent animal, no reason could be assigned for his suicidal leap.

The body bore no external marks of injury, save a slight escape of blood from the mouth. Upon taking off his hide, a contusion was revealed upon his left haunch, such as might readily be caused by a fall from such a height. The brain and medulla spinalis were quite healthy, as were also all the abdominal organs, save a number of recent superficial lacerations seen in different portions of the liver.

On opening the thorax, the right pleuro-cardial septum was found broken down, a large clot filling the pericardium, and about two quarts (more or less) of fluid occupying the right pleural cavity. Upon carefully raising the clot from its position, a laceration was discovered in the walls of the right auricle, on its anterior aspect, about an inch in length, with jagged and very irregular margins, through which protruded portions of three or four filamentary worms, resembling very closely the "gut" of the silkworm used by anglers. The heart was now separated from its connections and carefully examined, when ten of these parasites, varying in length from six to ten and a half inches, and about a third of a line in diameter, were found to occupy the right auricle and ventricle, and a single specimen was found in the pulmonary artery.

Professor Dalton, who very kindly examined the specimen, with the view of determining its characteristics and zoological position, considers it a hitherto undescribed species of *Spiropteræ*. He (Professor Dalton) exhibited to the society the genital organs of the male, as seen under the microscope, showing the two penes and convoluted testes surrounding the straight intestinal tube. He also remarked that the sexes

were about equally divided, and that the males were the smaller of the two, having also a distinct coil in the anal extremity.

A preparation was here shown, belonging to the museum of the "College of Physicians and Surgeons," labelled "A dog's heart filled with worms, from Hong Kong, China." The two specimens appear quite similar.

Dr. Isaacs remarked that, a number of years ago, while in the city of Baltimore, he examined the heart of a dog which died from the effects of an operation for the removal of the spleen, and in that case the heart was filled with apparently the same species of worm. Dr. Isaacs also added that, in his case, the animal had previously exhibited symptoms of disease. He was short-breathed, and considered asthmatic. Here, too, the parasites occupied only the right side of the organ.—*New York Journal of Medicine*.

THE NEW METAL.

ALUMINIUM begins, it appears, to come into more general use, at least in France. The eagles which surmount the colours of the army, hitherto made of copper, gilt by galvanism, are now made in aluminium, thus lightening the weight of the flag by nearly $2\frac{3}{4}$ lb. Aluminium is more sonorous than bronze, and is consequently brought into use for musical instruments. Spoons and forks, drinking cups, &c., have also been formed of it. The weight of the new metal is about one fourth that of silver. Fine silver being worth 225f. the kilogramme, and aluminium 300f., a piece of the latter, equal in size to a kilogramme of silver, will only be worth 75f., instead of 225f. Thus an article which in silver would cost 50f. would be only 16f. in aluminium.

NEW MANUFACTURES OF BEETROOT.

A NEW alimentary production has just been invented, made from beetroot. It very closely resembles coffee, and has received the name of *betterave tonréfiée*. When mixed in equal proportions with West India coffee, the taste is by some persons thought more agreeable than that of the genuine article; it is less heating, and does not require above half the quantity of sugar. Another new species of manufacture has just been created in France—the fabrication of paste-board from the pulp of beetroot. This fabrication is carried on to some extent in the commune of Foulain (Haute-Marne),

and can be employed, it is said, with advantage in ornaments, tea-trays, and other such articles.

APPLICATION OF LEECHES.

HAVING selected the spot to which they are to be applied, cover it with a sinapism, which is to be allowed to remain some time, in order to effect congestion of the capillary vessels. Then wash the place carefully, and place the glass containing the leeches upon it. In a *few minutes* they will all take hold and draw with an energy and rapidity quite remarkable. After the leeches fall off, the flow of blood from their bite is more abundant, and continues for a longer time, than under ordinary circumstances.—*Gazette des Hôpitaux*.

POISONING DOGS AND FOXES WITH STRYCHNINE.

It will be in the recollection of our readers, says a local journal, that we some time back published an account of the destruction by strychnine of some of Baron Rothschild's stag-hounds, and also of several fine foxes, on the farm of a Mr. Bowden, on the estate of Captain Lovell, at Soulbury, Bucks. From that time down to the present, foxes and dogs have at frequent intervals been found poisoned. W. S. Lowndes, Esq., only a few weeks ago, had two very valuable setters destroyed by foul means. A person who, it is supposed, was guilty of these shameful practices, has been convicted at the Winslow Petty Sessions. He is the brother of Mr. O. Bowden, of Soulbury, upon whose farm Baron Rothschild's hounds met with their death, and upon whose lands the poisoned foxes were found. The symptoms, as exhibited by the poisoned animals, were thus described by a Mr. Yates: He said that on Sunday, the 7th of December, he turned one of the dogs out of the house at dinner time. The dog remained away only a short time, when it returned home and went and smelled at the fire, and immediately fell down backwards, its joints becoming very stiff. It frothed at the mouth, and its lips were shrivelled up, leaving its teeth and gums bare. It died almost immediately.

Mr. Newham, a medical gentleman, who was examined before the bench of magistrates, proved that he found a large quantity of strychnine on an analysis of portions of the intestines and their contents.

The accused, Bowden, on being convicted under the Malicious Injuries Act, was ordered to pay damages and costs to the amount of £11 3s. 6d.

DISEASE IN CAVALRY HORSES.

A LETTER from Poona informs us that a very extraordinary disease has attacked the horses of the 14th Light Dragoons. It resembles the cholera in all respects. Many of the animals are violently purged in the first instance ; others are seized with cramp, and die without being purged.

Extracts from British and Foreign Journals.

**NOTES OF A MICROSCOPICAL EXAMINATION OF
“MEASLED” AND OTHER PORK.**

By WILLIAM SMITH, F.L.S., Professor of Natural History,
Queen's College, Cork.

THE subject of the present paper has of late excited much attention in this locality, the trade of the port of Cork and the industry of the neighbouring counties being immediately connected with the produce and export of provisions, a main portion of which consists of cured pork.

The disease in pigs popularly known as “ measles ” (though without any resemblance to the complaint bearing the name in the human subject) is one of frequent occurrence in the South of Ireland, and as its presence in the flesh of the animal is usually regarded as detrimental to its value as an article of food, the market-price of the commodity is thereby lowered, and the profits of the producer proportionally diminished.

Questions connected with the supply of provisions to the Crimean army having called increased attention to this subject, an attempt was lately made by the provision-merchants of Cork to arrive at more certain conclusions respecting the nature and extent of the disease, and its precise influence on the character and condition of the flesh affected by it.

Having been invited to assist in this research, by reporting on the microscopical appearance of the disease, and the meat affected by it, the following notes of a careful examination of fresh and cured pork, supplied to me, were my contributions to the inquiry :

The facts noted are not new to science, the subject having attracted the attention of several German, French, and British physiologists, and the results of their investigations being for the most part similar to my own.

The matter has not, however, been discussed in the *Micr. Journ.*, and the following record of independent observation, and personal inquiry, may interest the readers of this magazine, and possess corroborative value when taken in connection with the more important investigations of other naturalists.

Nineteen specimens were supplied to me, viz.:

6 of healthy fresh pork from various parts of different pigs;

6 of fresh muscle, "slightly measled;"

6 of fresh muscle, "badly measled;"

1 of cured pork, "badly measled."

The "measles" are occasioned by the presence of a parasitic worm, known to physiologists and anatomists as the "*Cysticercus cellulosæ*."

This worm, as it occurred in the muscle or flesh of the pork supplied to me, consists of an external bag or cyst of delicate rugose membrane, enclosing the animal of the *Cysticercus*, retracted within its folds; the space not occupied by the worm being filled with a clear watery fluid.

Pl. II, fig. 1, represents the natural size of the "measles" in fresh muscle; fig. 2 the same in stale or salted pork; and fig. 3 the same from fresh muscle, magnified 6 diameters.

The animal of the *Cysticercus*, when withdrawn from the cyst, within which it lies invaginated, and curled up, in all the specimens, consisted of a slightly enlarged head, fig. 4 *a*, and a neck formed of numerous rings, fig. 4 *b*, gradually enlarged into a bladder-like vesicle, fig. 4 *c*, which constitutes the body of the worm.

The neck and body of the *Cysticercus* are filled with a mass of minute transparent bodies, which a further examination leads me to regard as cellules discharging the function of assimilation, *i. e.*, converting the material endosmotically absorbed by the cyst and bladder-like vesicle into the substance of the *Cysticercus*. The form of these cellules is usually that of a flattened circular disc, and their average diameter $\frac{1}{1500}$ th of an inch, but neither their size nor form is constant, some being linear, others irregular in outline, and many not exceeding $\frac{1}{3000}$ th of an inch in diameter.*

The head of the *Cysticercus* is provided, at its extremity with a circlet of about 24 hooklets (fig. 5 *a*), immediately

* [These elliptical bodies are composed in most part of carbonate of lime, and would appear to be intended more for the purpose of giving greater firmness or solidity to the part of the entozoon in which they occur than for any other function.—*Editors of Microscopical Journal.*]

beneath which are situated 4 circular organs (*b, b*), afterwards more fully developed in the mature condition of the *Cysticercus*.

The hooklets, upon further examination with higher powers of the microscope, are seen to consist of a stem fixed in the flesh of the head (fig. 6 *a*), a barb (fig. 6 *b*), and a sickle-like point (fig. 6 *c*).

The *Cysticercus*, as above described, constituting the "measles," is imbedded *between* the fasciculi of the muscle, and occupies a chamber formed by the inflation of its cyst.

The cyst which in a fresh state fills the entire chamber, on the death of the pig parts with its contained fluid, which permeates the surrounding tissues.

The chambers then collapse, and the muscle in consequence becomes soft, and flabby to the touch.

The "measles" in the specimens supplied to me were all visible to the naked eye, the cysts when inflated being of an elliptical form, and having an average length of about one third of an inch.

The coil of the enclosed worm was nearly globular, with an average diameter of about one tenth of an inch.

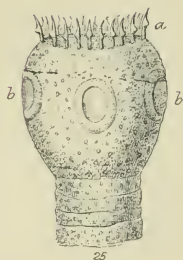
In the "slightly measled" pork the size of the worm was often less than in the "badly measled," but in every case the *Cysticercus* seemed to have reached the same degree of organic growth, and in none of the specimens, "healthy" or otherwise, could I detect the slightest trace of the animal in an earlier stage of development. Had the eggs, or young animals, existed, they could not have escaped my notice. In the specimens marked "healthy" there was no trace whatever of the *Cysticercus*.

The muscular tissues at a little distance from the cysts did not present any distinct alteration in their normal and healthy character, but in the immediate neighbourhood of the cysts there were evident traces of the altered or diseased condition of muscle known to physiologists under the name of "*fatty degeneration*." Where the "measles" are numerous *fatty degeneration* would be proportionally great in comparison with the amount of healthy muscle.

In the salted specimen the cysts were empty of fluid, and the "assimilating cellules" in the body of the worm had become somewhat opaque, presenting a central granular nucleus instead of the clear transparent appearance noticed in the fresh specimens. I conclude from this that the life of the *Cysticercus* is destroyed by the process of "*curing*." Fig. 7 shows the appearance of the assimilating cellules in the *fresh*, and fig. 8 in the cured specimens.



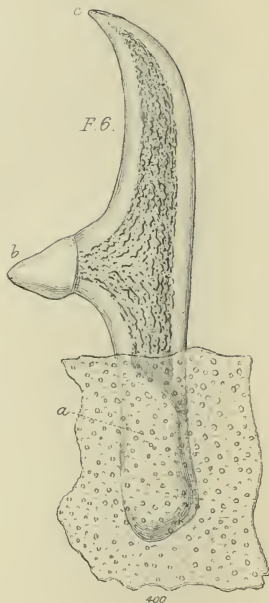
F5.



F3.



F6.



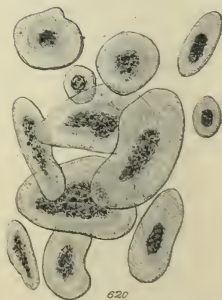
F4.



F7.



F8.



It is maintained by the most eminent physiologists of the present day, that the *Cysticercus* of the pig is the "scolex," that is, the intermediate or arrested condition of the "*Tania solium*," or tape-worm of man and other mammalia.

The organization of the *Cysticercus*, as above described, goes far to establish this opinion, and direct experiments instituted upon dogs and other quadrupeds fed upon fresh "measled" pork seems to place it beyond a doubt.

In the present case there was neither time nor opportunity to verify this theory by direct experiment.

The history of the early condition and future development of the *Cysticercus*, the pathological and hygienic deductions to be drawn from the above observations, and their bearing upon the wholesomeness or otherwise of fresh, cured, or cooked "measled" pork are questions which appertained to the branch of the inquiry entrusted to my colleagues; I may, however, observe, that the microscopical examination here detailed would lead to the conclusion that the presence of the *Cysticercus* in the small numbers which occur in "slightly measled" pork does not appreciably affect the healthy condition of the muscular fibre, and that it is only when the numbers of this parasite are considerable that the fatty degeneration and watery condition of the muscles become apparent; and as it further appears that the operations of curing, or cooking, destroy the assimilating powers of the cellules, and consequently the life of the *Cysticercus*, it would seem that no apprehension need be entertained of tape-worm following the use of "measled" pork, provided the flesh be carefully cured or thoroughly cooked.—*Transactions of the Microscopical Society.*

[Our thanks are due to Mr. Churchill for kindly allowing us the use of the plate to illustrate Professor Smith's paper.]

ON THE STRUCTURE AND DEVELOPMENT OF THE *CYSTICERCUS CELLULOSÆ*, AS FOUND IN THE PIG.

By GEORGE RAINEY, Esq.

THE *Cysticercus cellulosæ*, in its mature state, consists of two parts: one a small oval cyst, composed of a very thin membrane, rendered uneven on its external surface by minute rounded projections, and containing in its interior, granular matter, particles of oil, and a colourless fluid. This may be called its ventral portion. The other is folded inwards, occupying the centre of the cyst just described, but

by pressure it may be made to protrude. This part is sometimes called the neck. Its length varies very much in different *Cysticerci*, depending upon their age. It is hollow, having strong membranous parietes, wrinkled transversely, and composed both of circular and longitudinal fibres. The cavity has no visible communication with that of the ventral portion. It contains a multitude of small oval laminated calcareous bodies, which, when acted upon by acids, effervesce briskly, and become partially dissolved, leaving only a small residue of animal matter. When the neck is protruded, the extremity farthest from the cyst is seen to present an enlargement, sometimes called the head, on the free surface of which there is a quadrangular area, occupied by four circular discs and a ring of hooklets. Each angle contains a disc, and the hooklets are placed in a circle around the centre of this space. The suctorial discs are traversed each by a passage taking rather a spiral course, and terminating in the cavity of the neck. The membrane composing a disc presents two orders of fibres, circular and radiating. The hooklets are generally twenty-six in number, thirteen long and as many short, arranged alternately a long and a short one. Each consists of a curved portion like a bird's claw, and a straight portion or handle; and at the junction of these two parts there are tubercles, two in the short hooklets, and only one in the long ones. The hooklets are crossed by two zones of circular fibres. They are also connected by radiating fibres, which occupy the spaces between each adjacent pair, like the interosseous muscles situated between the metacarpal bones and phalanges. The hooklets are disposed like radii, with their points turned outwards and the extremities of their handles inwards, which, not meeting, circumscribe a circular space whose centre corresponds to that of the quadrangular area before mentioned. At this part there is no perforation answering to an oral orifice, but here the membrane is simply depressed so as to present a conical hollow. By pressure upon the neck, this membrane can be made to protrude in the form of a tongue-like process, to which the handles of all the hooklets are connected, so that when this part in the living animal is made to move, the handles of the hooklets will be drawn in with it, and their points carried from the entozoon, and thus made to penetrate the part to which it attaches itself. These entozoa are chiefly found in the cellular intervals between the muscular fibres, contained in an adventitious cyst formed by the condensation of the surrounding tissues. No more than one entozoon is ever met with in one cyst.

Development of the Cysticercus cellulosæ.

The earliest appearance of the incipient stage of the *Cysticercus cellulosæ* is a fusiform collection of small cells and molecules in the substance of a primary muscular fasciculus, or immediately beneath its sarcolemma. These cells, in this condition of the entozoon, have only an imperfect or partial covering; however, they soon become completely enclosed in a well-defined membrane, which is at first homogeneous, but which afterwards sends out short, slender, projecting fibres, resembling short hairs or cilia. These hair-like fibres, though resembling in some respects cilia, differ from them in being much less sharply defined and less pointed; however, for convenience sake, I shall speak of them as cilia. Their direction is remarkable. At either extremity of the fusiform animal they are reflected backwards at a very acute angle, like the barbs of a feather, their direction being of course opposite at the two ends. They become less and less inclined as they approach the middle of the body, where they stand out at right angles to the surface. The apparatus of cilia-like processes above described is evidently designed to give to the entozoon, whilst in this stage of its existence, the power of penetrating between the ultimate muscular fibrillæ, and thus to enable it to force its way from the interior of a primary fasciculus into the spaces between the muscular fibres. This will be the effect of the friction of the fibrillæ against the cilia, which will allow of motion in one direction only. And as its two ends must move in opposite directions, the cilia will also serve to aid the entozoon in its development longitudinally. That such is their office will be apparent on examining a sufficient number of specimens; in some of which the primary fasciculi will be seen to have been completely split up by these animals. But the correctness of this inference is more strikingly proved by the influence which the size and arrangement of the primary bundles of muscular fibres have upon the form and dimensions of the entozoa. Thus in the muscular parietes of the heart, where the primary fasciculi are smaller, and, from their frequent interlacing, shorter than in other parts, the *Cysticerci* are, in this stage of their development, also very short and of a different form to those found in other muscles, composed of striped fibre, although in other respects perfectly similar; and, when completely formed, those taken from the heart cannot be distinguished from those formed in other muscles. The cells which have been alluded to as forming the prin-

cipal part of the *Cysticercus* thus far developed, and contained in the investment first described, are all of the same character, differing only in their form and size, according to their age and situation. Those situated about the centre, and forming the chief part of its bulk, are collected together into rounded masses, giving to many of the animalcules an obscurely annulose appearance. They are of an elliptical, or rather reniform figure. This form, however, is not essential to these cells, but merely results from the circular shape of the masses into which they enter, the convexity of each cell being a part of the outline of its respective mass. These cells contain minute granules, or rather molecules, which are variously disposed in different cells, so as to present a variety of appearances, such as circular spaces, which might be mistaken for nuclei, but which seem rather to be produced by a deficiency of the cell's contents at these parts, than by any distinct nucleus. The mode of formation of these cells must be examined in the growing parts of the animal, and for this purpose its extreme ends are best adapted. When one of these ends is about to have an addition made to its length, the investing membrane at this part becomes at first very thin, and then disappears. A clear space is next seen, having in some specimens the form of the part which is about to be added to the extremity of the entozoon; in others, it has no defined limit. This space contains, in some cases, nothing but extremely minute molecules, of different shapes; in others, these molecules are mixed with granules of various sizes, which have every appearance of having been produced by the coalescence of the molecules; and lastly, with these molecules and granules, there are in other examples very distinct globular cells, of a bright aspect, looking more like nuclei than perfect cells; these soon become flattened oval, and ultimately take the elliptical form before described. All the time these changes are taking place in the molecules and cells, the membrane has been in progress of formation, so that when the molecules have disappeared, and their place has become occupied by perfect cells, the end of the animal is completed. The cilia are soon afterwards added. The lateral growth of these animals takes place in the same manner: the first indication is a separation of the cilia, which, it must be observed, are larger at the sides of an entozoon than at the extreme ends; and then a thinning of the membrane supporting them; and, lastly, the formation of globular cells, as before noticed. After the animals have become of a considerable size, and forced their way from the interior of the primary fasciculi into the cellular spaces between the larger

muscular fibres, they still continue to grow, especially in breadth; but they lose their cilia, and gradually acquire those parts which have been described as belonging to the neck. The first evidence of this addition is the appearance of inversion of the middle part of the cyst, forming a small hollow, the sides of which look as if thrown into folds containing granular matter, and the bottom presents a circular space in which are granular particles of various forms and sizes, but those in the centre are darker than the rest. It is from these particles that the suckorial discs, the hooklets, and the first of the laminated bodies are about to be formed, but as yet none of these parts are recognisable. At a stage a little more advanced, this apparent inversion of the cyst has increased, the neck has become longer, and the appearance of discs, hooklets, and laminated bodies is sufficiently distinct to be perfectly recognisable. The process of development is particularly apparent in the hooklets, and perhaps there is no other instance of the growth of an animal tissue which presents such facilities for the examination of the manner in which it is effected. First, because the part of the entozoon on which these organs are formed, is sufficiently transparent to admit of examination by the highest magnifying powers without any previous dissection. Secondly, because the material of which they are composed is so characteristic, and so dissimilar to the surrounding parts, that it can be detected in the minutest possible quantities. And, thirdly, as only a few of these hooklets are in progress of development at one time, and as these are in all stages of formation, every step in the progress of their growth can be traced from the merest molecule to a perfect hooklet. This is important in reference to the general theory of development, as it furnishes an example of the formation of a complete set of organs, on a plan more simple, and at variance with the cell-theory of Schwann and others. Before one of these hooklets takes on a recognisable form, it exists as a group of exceedingly refractive particles, all apparently of the same composition, and of a more or less globular form, but of very different sizes, some being so minute as scarcely to be visible by one-eighth of an inch lens, others being almost as large as the handle of a perfect hooklet, while the rest are of all dimensions between these extremes. The next condition of a hooklet is the apparent fusion or coalescence of some of these particles into the hooked part of the organ. Then the handle and tubercles are added, these having been previously formed by the fusion of the smaller particles, and these latter by the coalescence of the minutest and the minuter ones. Before the several

parts are perfectly consolidated, their points of junction can be distinguished, and in other groups the fragments corresponding to those recently united can be recognised. Directly a hooklet is found, it is of its full dimension; and some of its parts are even larger and more clumsy-looking than in older hooklets. The substance of the particles entering into these organs, after they are once formed, undergoes no change in its microscopical characters, but is the same after as before their union. It is impossible to single out any one particle from the rest, which can be taken for the nucleus of a cell, or for what physiologists would call a nucleated cell; and thus there is nothing which indicates that these organs have been formed by transformation of previously existing cells, but, on the contrary, there is every appearance that their formation is due to the simple coalescence of homogeneous molecules.

Up to the present point, the facts which I have stated are so obvious, that their accuracy will, I think, not be questioned; also the interpretation of them is not only that which appears to me the most natural, but is almost self-evident. There remain, however, some considerations of a more theoretical kind, though not of less importance. It will be asked, how the entozoon, in its earliest condition, such as I have described it, finds access to the interior of a primary fasciculus. Before attempting to answer this question, I must observe that my description commences from a condition of this entozoon so complete, that no one, on examining it in this state with the microscope, will deny its perfect similarity to those of the higher form. But there are other links in the chain which I must now consider, and which so far have been omitted only because I wished to keep that which is certain distinct from that which is probable. Before the cells and molecules already described accumulate in sufficient quantity to present the undoubted character above mentioned, they are found aggregated in smaller groups, and even occurring individually in all the primary fasciculi of the diseased muscle; their quantity, and the size and form of these groups, present the greatest possible irregularity in the different fasciculi. In some the molecular deposit looks like an early stage of fatty degeneration, but it has characters very different; one is the shape of the molecules, which resemble in all respects those in the growing ends of an entozoon; and another is, their situation, which seems to be between the primary fibrillæ, tending to separate them longitudinally; however that may be, it is an abnormal condition, and always coexistent with the higher

forms of the *Cysticercus*; and as the entozoon, as I have first described it, could not possibly have taken on that form all at once, these groups of molecules must therefore be looked upon as its antecedent stage, or as portions of *Cysticerci* in progress of development. But I also find in the specimens of muscle infested with these entozoa, many of the capillaries and smaller blood-vessels filled with organic molecules, which, so far as I am able to judge from the comparison of such extremely minute bodies, seem to resemble those molecules which are found in the primary fasciculi. The vessels filled with these molecules have their coats so thin as to be inappreciable, and some of the capillaries appear to be partially destroyed, and their molecular contents diffused among the sarcous elements. As this is an abnormal condition of the contents of these vessels, as well as of their coats, and, so far as my experience goes, is not found excepting in conjunction with the earliest stages of the *Cysticerci*, I am inclined to believe that the molecules in question are the same as those in the primary fasciculi, and that it is by their coalescence in these fasciculi that the formation-cells of the *Cysticerci* are formed.

Addendum, Dec. 6th.—After an entozoon has left the interior of a primary fasciculus, and arrived at the space between the muscular fibres, it loses its ciliated investment, and increases in breadth. Its margin now seems to be formed entirely by the convexities of the globular masses of cells of which its body appears to be made up, causing it to present a crenate form similar to that of the ventral portion of the perfect animalcule, with this difference only, that these cells are compressed. The next change which is visible is the formation of folds, which become more perceptible as the animal increases in breadth, and which remain in the perfect entozoon so long as it is confined to a small space, but disappear when it gets to the space between the surface of a muscle and the fascia covering it. The unfolding in this last situation seems to be produced by the imbibition of fluid, and the consequent distension of the ventral part. These more advanced stages of the worm-form are best found in those specimens of diseased muscle in which the perfectly developed *Cysticerci* abound. Their number in proportion to that of the perfect animalcules varies considerably in different specimens.

I have always succeeded in finding some of those of the worm-form along with the perfectly developed ones; and in some cases there are as many of one kind as the other. After they have acquired a certain breadth—about one twelfth, or the one eighth of an inch,—the central part of the cyst ap-

pears to be drawn inwards, forming a hollow; at the bottom of which, the granular material is deposited from which the suckers, hooklets, and calcareous granules are formed, as above described.—*Royal Society.*

ON THE PRODUCTION OF TÆNIA CONSIDERED IN RELATION TO PUBLIC HYGIENE.

By Dr. RIECKE.

It has been well proved by the experiments of Küchenmeister, that individuals fed on pork tainted with “measles,” and containing the peculiar entozoon called *Cysticercus cellulosæ*, become subject to tape-worm. Various German writers have supposed that these entozoa are destroyed by boiling, salting, and smoking the pork; and Dr. Riecke, of Nordhausen, has published a paper, in which he recommends the prohibition of the sale of pork, unless it has previously undergone these processes. In support of his views, he states that tænia is an exceedingly frequent complaint in the neighbourhood of Nordhausen, where there is a large consumption of raw pork by the people; and, on the other hand, that in Altmark, where this practice is not prevalent, he has only seen six cases of the disease among about 10,000 patients who have been under his care, during a period of fourteen years. He therefore considers that, in order to prevent the spread of this parasite, all pork should be prepared, by salting and smoking, before it is sold, or permitted to be used by the people.—*Henke's Zeitschrift.*—*Edinburgh Medical Journal.*

OBSERVATIONS ON THE STRUCTURE OF THE RETINA IN CERTAIN ANIMALS.

By H. MÜLLER.

I HAVE shown in my work upon the ‘Retina,’ that this part furnishes microscopic characters which may be employed in the systematic distribution of vertebrated animals, to such an extent, that it is often possible to determine the class, the order, and even the genus of an animal from a small fragment of its retina.

In general the more marked the systematic characters are in the different divisions of a class of vertebrata, the more do we observe variations in the microscopic characters of the retina. The retina of the sturgeon presents one of the most remarkable examples of this. In a recent examination I found that the layer of batons in this fish is constituted in accordance with a type foreign to the other fishes, a type which occurs moreover in the class of birds. There are two elements, the cones and the batons. The latter are truncated externally, whilst the internal part passes into a conical point. The fatty drops, which have been mentioned by other observers, do not belong to the batons but to the cones, which I had formerly suspected, and as may be seen in my work above referred to. The cones are composed of an internal thicker, and an external thinner part, as in birds. At the extremity of the former part is the fatty drop, which, except in its less brilliant colour, exactly resembles those which are found in the cones of birds. We do not at present know any other fish, of which the retina exhibits this arrangement of cones and batons, exactly similar to that of birds. But on the one hand it is very remarkable that this type of the retina, proper to birds, also occurs in certain reptiles, namely the tortoises, which, themselves, in this respect differ widely from the other sections of the reptiles. On the other hand, I may remark, that, amongst fishes, it is exactly in the orders which also possess the most peculiar characters, that we find the most distinct variations in the elements of the retina. In the sturgeons the layer of cones and batons is constituted in accordance with the type of birds; in the *Cylostoma*, as appears from my previous researches, there are only simple cones, without batons; in the *Plagiostoma*, on the contrary, I have only found batons and no cones. In the class of reptiles, we also find very important differences between the *Batrachia*, the *Sauria*, and the tortoises, whilst in the birds and mammalia there is a greater uniformity in the general type of the elements referred to, and only slighter modifications.

Another remarkable point is the presence of nervous fibres with double outlines in the retina in certain animals. It is well known that in the eye of the rabbit there is a beautiful white radiation especially on the two sides of the entrance of the optic nerve, and many observers have remarked that fibres are sometimes found elsewhere which contain a kind of medulla. But, besides the rabbits, there are many animals in which the optic fibres present a medulla with dark outlines, in a very marked degree.

I have found that in the sturgeon, the optic fibres which extend in a very elegant manner in the form of a double comb, possess very strong outlines in a great part of the retina. The retina of the *Plagiostoma* also, both sharks and rays, contains fibres of a breadth of as much as 0.01 mill., which exhibit all the characters of the varicose fibres with double outlines which occur in the nervous centres. Lastly, I have observed that in the eyes of many dogs, the optic nerve is still white at its entrance into the eye, and that it is only in the retina that the nervous fibres become pale and transparent. But the change takes place very soon after the entrance of the optic nerve, whilst in the fishes just mentioned, the fibres with double outlines extend over a great part of the retina, and only pass by degrees to the aspect of the pale fibres. In a physiological point of view it is remarkable that in the fishes of which I am speaking, notwithstanding the double outlines of the nervous fibres, the retina appears to be tolerably transparent during life, whilst in the rabbits and dogs it is opaque and white, in the whole extent of the fibres with double outlines. In the former case the influence upon the sight does not appear to be important, but in the latter the perception of light must be hindered or disturbed as far as this peculiarity of the fibres extends; and the ophthalmoscopic effect of the bottom of the eye, and especially of the entrance of the optic nerve, must present remarkable modifications in all the animals in which a state similar to that which has long been known in the rabbit exists.—*Comptes Rendus*.

ON THE PHYSIOLOGICAL ACTION OF ATROPINE IN DILATING THE PUPIL.

By GEORGE HARLEY, M.D., Teacher of Practical Physiology and Histology, in University College, London.

DURING the perusal of a paper of great merit (in the July number of the *Edinburgh Medical Journal*), on some of the cases treated at the Eye Infirmary,* I came upon a very ingenious theory with regard to the action of atropine and belladonna in dilating the pupil. After a lucid description, throughout which the physiological effect of these substances upon the iris is ascribed, not to their producing paralysis of

* 'Report of Cases occurring at the Edinburgh Eye Infirmary.' By Robert Hamilton, M.D., F.R.C.S.E., and Benjamin Bell, Esq., F.R.C.S.E.

the third pair of nerves, which are supposed to supply the circular fibres, but to the excitation of the filaments of the sympathetic supplying the radiating fibres of the iris, the author proceeds to express a wish that the question "might be brought to the test of direct experiment by some one accustomed to such inquiries."

I happened, during last winter, to have made, at the suggestion of Professor Garrod, some experiments exactly analogous to those recommended in the same paragraph by Mr. Bell, and considering that the question might be fraught with a certain amount of interest, especially as it would seem to have excited some discussion at a recent meeting of the Medical and Chirurgical Society, I beg to lay before your readers the mode of proceeding, and the results obtained from the experiments.

In the early part of last year, Professor Sharpey made an experiment, in order to ascertain if atropine, when directly applied to the cervical sympathetic, would cause dilatation of the pupil; and, in the beginning of this year, Professor Sharpey and I repeated the experiment upon a cat, in the following manner:

Experiment 1.—The left cervical sympathetic nerve was carefully dissected out from the neighbouring tissues, for nearly two inches in extent, and afterwards divided; the pupil of the eye, on the same side, immediately, or at least in a few seconds, became contracted, and permanently remained so. The upper end of the cut nerve was next suspended in a strong solution of atropine, and, notwithstanding that it was retained in the liquid during at least twenty-five minutes, no dilatation of the pupil occurred either then or throughout the day. This experiment I have again repeated with an exactly similar result, and I believe the same thing occurred in Professor Sharpey's first experiment. Atropine thus certainly appears to have no direct simulating effect upon the sympathetic nerve in the neck; for had it stimulated as galvanism does, the application of it to the nervous substance of the cervical sympathetic would have been followed by dilatation of the pupil.

Experiment 2.—On another occasion, while performing an analogous experiment upon a cat, a drop or two of the atropine solution accidentally fell upon the exposed muscles of the neck, and in a short time after absorption had taken place, the pupils of both eyes became dilated, although in different degrees. The dilatation of the pupil in the sound

eye occurred to such an extent, that scarcely more than the border of the iris remained visible, while the pupil of the eye on the side where the sympathetic was divided, became dilated *only to about one-half*, and remained in that condition during several hours. As the result of the first experiment negatives the idea of atropine exciting the nerve filaments supplying the radiating fibres through which the dilatation of the pupil is produced, we are forced to the conclusion that, in the present case, the semi-dilatation must originate, or rather depend upon, paralysis of the nerve supplying the circular fibres which govern the contraction of the pupil. We shall see, in the sequel, in how far the phenomena observed in another experiment tend to confirm this view.

Experiment 3.—The conjunctiva of the right eye of a dog was moistened with *a single drop* of the solution of atropine—in half an hour the adjacent pupil became fully dilated, while the iris of the opposite eye was not observed to be in the least degree affected.

Experiment 4.—On another occasion, *several drops* of the same solution were at different times brought in contact with the conjunctiva of one of the eyes; and not only did the adjacent pupil, but also that of the other eye, become fully dilated.

The results of these last three experiments induce me to coincide with the theory advanced by Mr. Benjamin Bell. According to his view, the atropine must have, in all three instances, passed into the circulation before making its presence known by its characteristic action upon the pupil. That in the local application in Experiment 3, the quantity of the alkaloid employed, although extremely minute, was nevertheless able to reach the periphery of the nerves of the iris so speedily, as to be still sufficiently concentrated to produce dilatation of the pupil; but that, by the time it arrived at the heart, and became diffused through the general mass of the blood, it was too much weakened by dilution to be capable of acting either on the root, in the course, or at the periphery of the nerve supplying the opposite eye with sufficient power to cause dilatation of the pupil. On the other hand, in Experiments 2 and 4, the quantity of atropine (in the one case absorbed by the capillaries of the muscles of the neck, in the other by those of the conjunctiva and adjoining tissues) was sufficiently great, that, notwithstanding its being first diffused through the general circulation, it arrived at the

nerves of both irises in so concentrated a state, as still to be able to cause dilatation of the pupils. Whether in the latter two examples the narcotic acted on the periphery, or on the roots of the nerves, it is impossible to say ; but, certainly, in the case where the quantity of atropine employed was so minute as to have just sufficient strength to dilate one pupil, and that the contiguous one, we are constrained to admit the possibility of the atropine having directly paralysed the periphery of the nerve. The origins of the nerves supplying the opposite eyes are so close together, that we cannot suppose, with any degree of feasibility, the atropine to have been transported by the general circulation to the root of the nerve on which it acted ; had it been so, we must have had dilatation of the pupils of both eyes ; for it is natural to suppose, that a similar quantity of poisoned blood would simultaneously arrive at the roots of both nerves. In Experiment 2, where the narcotic directly entered the general circulation, as well as in Experiment 4, where such an excess of atropine was absorbed by the conjunctiva, that not only the contiguous, but also the distant pupil became dilated—the supposition of the narcotic having acted upon the origins of the nerves, appears to be not altogether unwarranted.

Experiment 5.—Into the left eye of a cat, whose pupil on that side had become permanently contracted in consequence of excision of about an inch of the left cervical sympathetic, a drop of the solution of atropine was allowed to fall. In a short time the adjacent pupil became *half dilated*, and, although more of the solution was afterwards added, complete dilatation could not be induced.

This agrees with “the case narrated by Dr. Gairdner, in which contraction of the pupil was associated with an aneurism at the root of the neck, . . . and where repeated doses of belladonna, given internally, dilated both pupils. But it was observed throughout the experiment, that the affected pupil continued smaller than the other ;” just as we have seen in Experiment 2.

Experiment 6.—The third nerve of a cat was divided at the point of exit from the sphenoidal fissure ; the pupil on the same side immediately became dilated, and remained so. The addition of a couple of drops of atropine solution was not observed to increase the dilatation of the pupil, as we expected, from the observation of Dr. John Struthers, who noticed that in the human subject belladonna acts upon pupils already dilated from some diseased condition of the

third nerve. Perhaps in those cases where the narcotic is observed to increase the size of the already dilated pupil, some small twigs of the nerve remain incompletely paralysed. As no effect was observed to follow the application of atropine in the experiment just cited, I divided the cervical sympathetic on the same side of the neck. The iris gradually contracted, but not to the same marked extent as in the cases where the sympathetic was alone divided; in fact, the pupil remained permanently in a state of half dilatation and half contraction. The circular as well as the radiating fibres of the iris being paralysed by the section of their respective nerves, the contractile property of the muscular fibrillæ was brought into abeyance, and there could be neither on the one nor the other side an excess of action so as to produce either a condition of dilatation or contraction of the pupils. This, indeed, is an exactly similar condition to that which supervenes when, after section of the sympathetic, a solution of atropine is dropt into the eye. We have seen, both in the experiments performed by Professor Sharpey and by myself, that atropine can *not* cause dilatation of the pupil by stimulating the cervical sympathetic; and, I think we are justified in the present state of our knowledge, in continuing to attribute the influence of atropine upon the pupil, to its possessing the power of paralysing the third pair of nerves.

In a similar manner I would account for the effect of opium and other substances possessing the power of inducing contraction of the pupil, not to their stimulating the third pair, but to their paralysing the sympathetic which governs the dilatation of the pupil.

In conclusion, the foregoing experiments, I think, tend to prove:—

1. That atropine does not possess the power of dilating the pupil by directly stimulating the sympathetic nerve.

2. That to act upon the pupil it must, as Mr. B. Bell says, first be absorbed.

3. That it can act, not only on the periphery, but also on the roots of the nerves.

4. The probable action of atropine or belladonna in dilating the pupil, depends on its paralysing the ciliary branches of the third pair of nerves, and not on its stimulating the filaments of the sympathetic, which supply the radiating fibres of the iris.—*Edinburgh Medical Journal*.

THE VETERINARIAN, FEBRUARY 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

PROSPECTS OF THE PROFESSION.

To "turn over a new leaf" at the commencement of a new year is doubtless a vow far more frequently made than performed. The resolve, however, is most assuredly a plain proof that he who takes it feels that something in his general mode of life exists which requires amendment. He is either sensible of a dereliction of duty, or sees that advantages will spring from the adoption of some other course. He therefore often seizes upon the moment with avidity, and for a time enjoys the reward of his altered conduct; but as the year steals on, both his good intentions and activity decline, and he relapses into his former method of procedure; and thus, falling back upon his old habits, perhaps indulgences, reaps again the bitter fruit of neglect.

Various causes are to be assigned for the practical non-fulfilment of good resolves—some of these may operate from within, and others from without—some may have a personal, others a relative bearing—be they, however, what they may, their effects are no less certain than injurious. How widely different is the case when pledges are redeemed, when good intentions give permanent place to good performances, and when each succeeding year only tends to consolidate more firmly and lastingly those things which were well and rightfully begun. As with individuals, so with societies, and as with societies so more especially is it with those persons who are intrusted with the superintendence, and care of the affairs of our varied institutions. In the former case which we have pictured, but one individual, as a rule, suffers from the negligence, or at least to the same extent; but in the latter many are injured, cast down, or it may be destroyed.

Their fond hopes and desires are crushed—their progress and advantages sacrificed, and that perhaps for ever.

We have been led into this train of thought while reflecting on the consequences connected with the notices of motion which were given at the last meeting of the Council of the Royal College of Veterinary Surgeons, and which we publish in another part of our journal. From these it would appear that the governing power of the profession is about to revise its code of bye-laws, with a view to the diminution of the fee now paid by the pupil for his examination and admission into the body corporate. That this is a wise step, and one likewise which can be taken without impairing either the strength or efficiency of the Court of Examiners, or permanently restricting the requirements of the Council for the working of the Charter, we have never doubted, no more than we have the desirability of its being accomplished with as little delay as possible.

In giving expression to these sentiments so frequently as we have done, it is satisfactory to know that we have been but the true exponents of the feelings and wishes of the profession as a whole, and that throughout we have laboured for its interests not our own. “Those who are in it must be of it,” have become as familiar to our ears as “Household words.” We are told, and which agrees with our opinion, that there must be no middle class standing between farriers on the one side, and legalized members of the profession on the other ; partaking, as it were, of the nature of both, and which there would be, if the schools should act for themselves, and become independent of the enactments of the present charter. Men educated for the profession, and in every way worthy to join its ranks, must not be thrust aside by injudicious legislation. The name of Veterinary Surgeon ought to have but one meaning ; and it should be a sure guarantee that its possessor is both a legalized and a graduated member of our body. Thus faith will be kept with the public, and faith also with ourselves, for until this be done, the onward progress of Veterinary Science must be hindered, and the phrase will practically become as unmeaning in its import as it is a now hackneyed one.

Entertaining, as we do, these views, we hail with much satisfaction the prospect which is afforded of the removal of the difficulties which hitherto have stood in the way of professional unity and co-operation. The diminution of the examination fee may in itself be insufficient to effect all the changes which are needed, but, nevertheless, it is the first difficulty to be removed; for, like the now extinct and restrictive corn-laws, it forms the keystone of the arch of injustice and monopoly. Take this away, and soon all those things which it has helped to support, and which experience has shown must be rearranged, will fall. Then a new basis can be laid, and a new superstructure erected, more fitted for the altered circumstances in which we are placed. Let there be, therefore, no more divided councils, and, above all, let false philosophy and antiquated dogmas be excluded both from our future discussions as well as enactments.

Some, perhaps, may still be found, who believe that the arch of monopoly can yet serve to conduct us across that current which they probably view as the stream of independence; but vain is their imagination, if they consider that duration and permanency are integral portions of its structure. Long have we seen that it was in truth the river of destruction which ran between its piles, and was daily undermining its foundation. Late events, it must be remembered, have also materially tended to the increase of this ever powerful stream, and now its rising waters are beginning to overflow its banks, thus requiring bold and decisive measures quickly to be adopted to prevent it submerging all the materials which have been either built up or brought together for future use.

To drop figurative language, we are enabled to appropriately quote the sentiments of the mighty *Times*, when commenting lately on the French alliance, as expressive of our own upon the subject on which we now write. "We are then," says the thunderer,

"Heartily and sincerely in favour of the alliance, and anxious that it should continue to be a real alliance, a union between equals, with equal

voices and equal power, pursuing the same well-defined objects, and deliberating together with equal good faith and sincerity, as to the means by which these objects are to be attained; not a mere nominal union, in which mutual distrust shall usurp the place of mutual confidence, and two powerful allies shall thus, by the weakness of divided counsels, be rendered inferior to either separately."

We will add but another word in conclusion, and that is again to express a hope that the Council may succeed in devising means to accomplish the cordial co-operation of all parties for the benefit and advancement of our science, and not to cease in its endeavours until this great end is attained.

"Sera nunquam est ad bonos mores via."

Not one step alone should be taken, for we must all press onwards. See, the emblem of Peace still floats above the horizon, and gently waving by its side is the banner of Victory. Let us seize, then, the golden moment, ere the storm rises, and rends to worthless rags their silken, and as yet united, bands.

INOCULATION FOR PLEURO-PNEUMONIA.

WE were scarcely prepared to find, as we have done in perusing the late numbers of the *Annales de Médecine Vétérinaire*, that this subject is still engaging the attention of the scientific public in Belgium. We had thought, that after the signal failure Dr. Willems had sustained in bringing the matter before the Chamber of Representatives—who refused not only to recompense him for his labours, but even to recognise any utility as belonging to his system of inoculation—we should have heard no more about it, except that it had "gone to the tomb of all the Capulets." It is true the Minister of the Interior, on that occasion, stated that the government would call upon the Special Commission, which it had originally instituted, to make further inquiries and adopt other experiments if they should be deemed necessary.

Nearly two years have elapsed since then, and no additional report has been presented, simply because the Commission has arrived at no opposite conclusions to those it had already

made public. One of the chief of these is "*that the fluid extracted from the diseased lung possesses no specific characters, and does not comport itself differently from other organic matters when introduced into the animal organism, and that when so employed it fails to prevent the development of exudative pleuro-pneumonia.*"

Long since we proved the same fact, and here lies indeed the whole gist of the question, and as a *fait accompli* it for ever puts a veto on Dr. Willem's inoculations. The Doctor, however, seems to have had his mind so long imbued with a belief of the value and importance of his system, that he appears instinctively, if not intentionally, to shut his eyes to the most convincing and glaring proofs of its utter uselessness. Throughout these lengthened inquiries he has shown that he is not very easily to be beaten; and therefore, having missed the high stake for which he played in his application to the government, he has sought a recognition of his services in other and inferior quarters, and to some extent he has been more successful, of which the following is a proof.

"The Central Society of Agriculture," says the *Annales de Médecine Vétérinaire*, "at its last general meeting, gave several rewards to different persons for the services they had rendered to agriculture, and among these rewards one was bestowed on Dr. Willems *for his discovery of the cure for pleuro-pneumonia.*" Well may the *Annales* exclaim, "if it be that the Society has rewarded the Doctor for the activity he has always displayed in forcing inoculation upon the public, we can give our sanction to its proceedings; but we believe, nevertheless, that the Society should not exercise the power of judging of the value of the discovery, and certainly that it should not decide the question affirmatively. If it has done this, we cannot refrain from expressing our surprise, and we must require of the Society to show us whence it has drawn the elements of such a solution. The words," it adds, "which we have put in italics will give our readers a tolerably clear idea of the amount of trouble which the Society has taken in the matter, and enable them also to form a just estimate of the value of its opinion, when it is remembered that the Special

Commission, after four years' attention to the subject, has not yet sent in its final report."

These observations of the *Annales* appear to have produced a reply from the secretary of the society; for, in a subsequent number of the journal, we read that "inoculation by Dr. Willems has nearly run its race. Facts are insensibly and slowly drawing it towards its destiny; but the central Society of Agriculture, in the person of its Secretary, goes faster than facts. He has told us, in answer to our remarks, that "*inoculation is a question already decided, its efficacy is acknowledged, its value is immense, and that those who doubt it must either do so from ignorance or jealousy.*" Truly, "a friend in need is a friend indeed."

Although coming from an agricultural society, and from one not of our country, we nevertheless feel bound, for the important interests which are at stake, to enter our protest against such statements as these. It is needless that we should again repeat, that the experiments which have been undertaken here, as well as in every other country, to show the identity of Dr. Willems' system with *true inoculation*, have not only failed to do this, but have proved the very opposite. Every fundamental law of thus propagating disease, is violated by his boasted discovery.

Woe to science, if we are to go back to the days of cutting cows' tails, and rubbing in pepper and salt, to cure paralysis of the hind extremities, for, in truth, we do thus retrograde, if so be we give support to or countenance the making of deep incisions into this part of the organism of bovine animals, for the purpose of introducing therein some of the serum of the blood effused from a diseased lung, so as to give them immunity from an attack of a fatal pulmonary epizootic. Let us hope that we shall hear no more of such quackery, nor of "its efficacy" or "value."

THE REPORTS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

At the meeting of the Council of the College, held on the 7th ult., some observations were made by members which seemed to imply that on us, as the editors of this journal, depended the publication of the proceedings of the Council. We have, therefore, thought it necessary to state that our pages are simply the medium through which these reports are brought before the profession, after their general correctness has been confirmed by the revision committee; and very glad are we if we can thus serve the interests of the corporate body. The signatures of the committee are a sufficient guarantee of the official nature of the reports, and any omissions or inaccuracies, therefore, which may occasionally be detected, must attach to the committee and not to ourselves.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL, JANUARY 7, 1857.

PRESENT:—The President, Messrs. Braby, Constant, Ernes, Gowing, Jex, Jones, Langworthy, Legrew, Silvester, Turner, Wilkinson, Withers, Professors Simonds, Morton, and Varnell, and the Secretary.

W. STOCKLEY, Esq., the President in the Chair.

A letter was read from Professor Sharpey, acknowledging "the honour of his election as a member of the Board of Examiners.

A presentation copy of Mr. J. S. Gamgee's 'Surgical Research' from the author, was laid on the table; and on the motion of *Mr. Silvester*, seconded by *Mr. Jex*, the thanks of the Council were given for the same.

The Quarterly Balance-sheet was then read, which showed that the receipts of the quarter amounted to 11*l.*, and the expenditure to 70*l.* 17*s.* 2*d.*, thus reducing the balance in hand to 304*l.* 19*s.* 5*d.* On the motion of *Mr. Ernes*, seconded

by *Assistant-Professor Varnell*, the report was received and adopted.

The Registrar's report was next read by that officer. It announced that "five deaths had been reported during the past quarter, and that among them we had to regret the loss of Samuel Peech, of Sheffield. Mr. Peech was elected a Vice-President of the College in 1847, and member of the Council in 1848. His zeal and untiring energy, defying alike time and distance, will long be remembered by those who have witnessed his regular attendance at the meetings of the Council. He passed in 1805. Christopher William Hawes, of Tewkesbury, passed in 1846. Ephraim Howes, of passed in 1831. And George Watts, jun., of Dublin, who Wymondham, passed in 1855. Richard Allen, of Chester, obtained his diploma in 1845, had also been removed by death from among us. Five gentlemen had likewise been admitted as members of the College.

Cheques were afterwards ordered for the current expenses of the quarter.

Two notices of motion were then given, one for an alteration of Bye Law 37, the other for a new Bye Law. These have to be suspended in the Board-room three months before their discussion ensues.

The first, by *Mr. Ernes*, "That each candidate, fourteen days prior to his examination, must deliver to the secretary a certificate, or such other legal proof as may be required, of his having been educated at some one of the recognised colleges or schools, with a fee of five guineas for examination, and a fee of two guineas for admission and registration."

The second, by *Mr. Gowing*, "Any candidate failing to obtain his diploma in two examinations, shall pay a further fee of three guineas on again presenting himself before the Board."

E. N. GABRIEL.

MISCELLANEA.

IN La Vendée the "hutters" hang a branch of a species of holly (the *ilex aquifolium*) above the manger of their cows, to preserve the animals from ringworm.

DROUGHT AT MORETON BAY.

WE learn that there has been great mortality both among horses and cattle in the bush during the last month, owing to the prolonged dryness of the season, and the severity of the weather, which had the effect of withering what little pasturage there was, and impeding the growth of the young herbage. The bush for miles around is strewn with dead carcasses of calves, cattle, and particularly working bullocks; while the absence of water in the natural reservoirs near the Bremer has impelled numbers of poor animals to venture down its steep banks to slake their thirst, but where they met their death, either from their inability to ascend, or from their having fallen into the water. The warm state of the weather a few days since inspired the hope that spring with its genial rains was coming: but we had no sooner formed these hopes than they have been blighted and disappointed. Yesterday we had a sudden return to drying westerly winds, and the drought continues in all its severity. The water in the Bremer, from its stagnant state, and the number of carcasses floating about, combined with the offal and other putrid matter from the Warrell Boiling Establishment, has rendered it scarcely fit for drinking; indeed, many persons send for water some distance from the town, at considerable expense, rather than use that from the river. All around the town presents an aspect of sterility and barrenness very different from its usually verdant appearance; and if Providence should not soon bless the district with rain we fear the consequences will be most disastrous to the small farmers, and proprietors of stock generally. Every person engaged in pastoral and agricultural pursuits is now anxiously watching the weather, rightly judging that unless we have a change from dry to wet weather shortly, there will be no hope of a fruitful season. Notwithstanding the drought, there is one gleam of sunshine, and that is—the wheat crops are doing well, and also several other kinds of grain which have been sown this year in the neighbourhood of the town.—*North Australian*, August 5.—*Empire*, Sydney.

ENGLISH ROADS IN THE LAST CENTURY.

DE FOE, in 1724, thus describes the roads of Sussex:—"Sometimes I have seen one tree on a carriage, which they call here a tug, drawn by two-and-twenty oxen; and even then this carried so little away, and then thrown down and left for other tugs to take up and carry on, that sometimes it is two or three years before it gets to Chatham; for if once the rain comes in it stirs no more that year, and sometimes a whole summer is not dry enough to make the roads passable." And again,—“Going to church at a country village not far from Lewes I saw an ancient lady—and a lady of very good quality I assure you—drawn to church in her coach with six oxen; nor was it done in frolic or humour, but mere necessity, the way being so stiff and deep that no horses could go in it.” So late as 1767, Arthur Young speaks in this way of an Essex road to Tilbury:—"Of all the cursed roads that ever disgraced this kingdom in the very ages of barbarism, none ever equalled that from Billericay to the King's Head at Tilbury. It is for near ten miles so narrow that a mouse cannot pass by any carriage. I saw a fellow creep under his waggon to assist me to lift, if possible, my chaise over a hedge. The ruts are of an incredible depth, and a pavement of diamonds might as well be sought for as a quarter. The trees everywhere overgrow the road, so that it is totally impervious to the sun except at a few places. And, to add to the infamous circumstances that continually occur to plague a traveller, I must not forget the eternally meeting with chalk-waggons, themselves frequently stuck fast till a collection of them are in the same situation, and twenty or thirty horses may be tacked to each other to draw them out one by one. After this description will you, can you believe me, when I tell you that a turnpike was much solicited for by some gentlemen to lead from Chelmsford to the fort at Tilbury Fort, but opposed by the bruins of this country, whose horses are torn to pieces with bringing chalk through these vile roads; and yet in this tract are found farmers who cultivate above a thousand (pounds) [acres?] a year, but are perfectly contented with their roads."

THE LAST NEW HORSE-FAIR SWINDLE.

THE fairs in this part of the country (Yorkshire) have for years past been infested by an organized gang of swindling horse-dealers, whose nefarious dealings entitle them to be styled the Bedouins of the horse-fair, though they are better known as the "Leeds gang." The hereditary descendants, probably, of the sharpers who swindled the Vicar of Wakefield's son Moses out of his father's horse-of-all-work, they have invented many new devices since Oliver Goldsmith honoured them with the notice of his pen. A good-looking, glandered horse will keep the brotherhood of knaves quite in clover for a long succession of fairs, if the wretched beast can be kept on his legs so long a time. At every mart for equine quadrupeds there are buyers who cannot forego the purchase of such a horse apparently worth thirty or forty pounds, when they see him offered for less than half the money; and generally when such a sale has been effected by certain of the gang of screw dealers, others in league with them succeed in repurchasing the steed for fewer shillings than just before he had been sold for pounds, the new purchaser generally being unwilling to brook the exposure of his simplicity, and preferring to take a few shillings for a worthless animal rather than have him destroyed. In this wise the game is kept alive. This specific fraud we have found occasion to expose after every Sheffield fair for years past, and perhaps it does not work quite so well as formerly. Hence we have now to exhibit a new dodge practised by our old acquaintances the Bedouins. Here is a sample of the new pattern. A simple, honest countryman came to our fair last Tuesday to buy a horse, and, lackaday! he fell among thieves, who sold him one. It seemed a perfectly correct transaction; and thus far so it was, in fact. The beast was not so "cheap" as to excite suspicion, and the purchaser was satisfied he wasn't glandered at any rate. But he had not been many minutes in possession of his new master before certain of the Leeds worthies went to him, and, declaring that the horse was glandered, offered to repurchase him for half-a-crown! One of the rascals, affecting liberality, offered the advanced sum of six shillings. The new purchaser was unwilling to believe that the horse was really affected by the loathsome and infectious malady imputed to him; so one of the would-be purchasers, when the owner's back was turned, slipped into the stable where the tabooed

horse was, and while affecting to examine him with a view to an advanced bid, inflicted an incised wound in the nostril of the unfortunate animal. Blood flowed from the wound, and to this effusion the roguish dealers pointed as proof of the existence of glanders, and clamorously renewed their offers to purchase, at the same time threatening to inform the police of the presence of a glandered horse, the owner of which was liable to punishment for having him in the fair. The owner with difficulty broke loose from the gang and hide him to the surgery of Mr. B. Cartledge, in Market Street, whom he consulted as to the condition of the horse. Mr. Cartledge's professional skill in horseflesh failed to discover any symptoms of glanders, but he did find out that the left nostril of the animal had very recently been cruelly cut with a knife or other sharp instrument; and thus was detected the heartless trick which had been resorted to for the purpose of enabling the gang to buy back the horse at the price of a glandered beast. By adopting the precaution of consulting a veterinary surgeon the purchaser escaped a well-planned swindle; and he had the satisfaction to learn that the horse was worth about as much money as he had cost.—*Sheffield Times*.

OBITUARY.

WE regret to have to announce the death of Mr. Samuel Peech, who for many years practised as veterinary surgeon in the town and neighbourhood of Sheffield. Mr. Peech retired from the active duties of his profession at the close of 1854, and has since then resided at Godalming, Surrey, where his death took place, on Friday, December 26th, at the advanced age of 73 years. He was the son of the late Mr. Samuel Peech, of the Angel Inn, Sheffield, whose name is so often associated with the tales of coaching opposition in the good old days. Mr. Peech studied his profession under the late Professor Coleman, and obtained the diploma of the Royal Veterinary College in the early part of 1805. He filled the office of vice-president of the Royal College of Veterinary Surgeons, and was at the time of his death a member of the council of that body, having been elected to the former office in 1847, and to the latter in the succeeding year. Perhaps no member of the veterinary profession has practised his calling more worthily, or with greater credit and

success. Upright and honorable in all his dealings, and punctual almost to an excess, the name of Peech was heard only to be respected; and there are friends innumerable, including very many of the noblemen and gentry of Yorkshire and the adjoining counties, who will learn with unfeigned regret that they have seen Mr. Peech for the last time. He first commenced practice in the Angel yard, from which he removed into George Street, and ultimately settled in the premises now occupied by Mr. Cartledge, veterinary surgeon, and where he remained for upwards of thirty years. The distances Mr. Peech rode on horseback are something fabulous. He frequently would travel in such manner ninety or a hundred miles per day, leaving as early as two o'clock in the morning, and breakfasting forty and fifty miles from home. There is little doubt, in the minds of those who knew him best, that he rode more miles than any other man in England. An instance of his wide spread celebrity occurred on an occasion of his being in the neighbourhood of York. A post-boy returning to an hotel yard with his horses, after a journey of some forty miles, Mr. Peech said to him, "How far have you ridden to-day? I suppose you often ride great distances. Did you ever calculate how many miles you rode in a year?" "No, sir," says the post-boy, "I hardly could do that; but there is a chap they call Peech of Sheffield who beats us all." He invariably rode on horseback, where, indeed, he was better known than in any other position; but in the early part of his career he drove a light "sulky," which being blown over by the force of the wind on one of the neighbouring moors, he never again got into a vehicle of the kind, nor, until the last few years of his life, did he possess a carriage of any description. The hacks he rode were usually thorough-bred, which his light weight allowed of his doing, and they, with the invariable neatness of his horse accoutrements, were the admiration of many. Some of his horses were at one time almost as well known as himself, and to his great humanity be it told that with these valuable servants he never parted. In his service they earned and obtained an honorable grave. "Queen Mab," "Garrick," a hog-maned horse, and "Dulcinea," were his chief celebrities. The former he calculated he rode one hundred and ten thousand miles in twelve years; and the estimation of his having ridden on horseback on an average fifty miles per day, or three hundred and fifty miles a week, for forty successive years will be admitted, by all who knew the extent of his practice, not to be an exaggeration. Mr. Peech was full of wit and anecdote, and which the incidents

of his own life chiefly furnished. One of some point may be related here. The late vicar of Sheffield, the Rev. Dr. Sutton, once said to him—"Mr. Peech, how is it you have not called upon me for your account?" "Oh," said Mr. Peech, "I never ask a *gentleman* for money." "Indeed," said the vicar, "then how do you get on if he don't pay?" "Why," replied Mr. Peech, "after a certain time I conclude that he is *not* a gentleman, and then I ask him!" By the medical profession of his native town, Mr. Peech was looked upon as one of their own body, and with many of them he was on terms of the closest intimacy.—*Sheffield Times*.

To the death of Mr. Peech we have to add that of another respected member of our profession, Mr. G. Watts, jun., of Dublin. Mr. Watts' diploma bears the date of May, 1825.

At the special request also of a correspondent, we readily give insertion to the following account of the death of M. Herr Sticker, a Prussian veterinary surgeon of some repute in Cologne. M. Sticker was in frequent correspondence with us, with reference to the extension of pleuro-pneumonia; and the means adopted in this country to limit its spread, a subject in which he took the deepest interest.

"Herr Sticker, department veterinary surgeon, died at his residence in Cologne, in September last, at the age of 45. He was highly esteemed as a private practitioner, and a great favorite also with the Prussian government. As the official organ of the government, he was the author of several pamphlets on the different epizootics which prevailed in his district, and was likewise a warm advocate for the inoculation of cattle for the prevention of pleuro-pneumonia."

SUDDEN DEATHS.—Mr. James Fishwick, veterinary surgeon, died very suddenly at his residence in Curzon-street, Oldham, on Thursday, January the 1st. This is the sixth case of sudden death which has occurred in the town during the week.

THE
VETERINARIAN.

VOL. XXX,
No. 350.

MARCH, 1857.

Fourth Series,
No. 26.

Communications and Cases.

A FURTHER INQUIRY INTO THE REASONS
WHY THE HORSE RARELY VOMITS.

By JOSEPH SAMPSON GAMGEE,

Staff Surgeon of the First Class, and Principal Medical Officer of the British Italian Legion, during the last War. Late Assistant-Surgeon to the Royal Free Hospital; President of the Medical Society of University College, and House Surgeon to University College Hospital. Member of various learned Societies, British and Foreign.

THE disputed question amongst physiologists concerning the act of vomiting in the horse, having been one of the objects of my earlier experimental inquiries, I published the results in the *London Monthly Journal of Medicine* in February, 1852. The late Mr. Percivall honoured me by transferring my memoir to the pages of this periodical; but through some curious coincidence, the printer altogether omitted reproduction of the foot notes, several of which contained facts and reflections directly bearing upon, and materially affecting the reading of the text. I thus laboured under the disadvantage of being misinterpreted by the readers of this Journal, and by the members of several learned societies on the Continent, who chanced to refer to the maimed edition of my 'Inquiry,' and on it to found observations, the fallacy of which would, I presume to think, have been apparent and hence avoided; if the physiological considerations I had developed, had not been in part accidentally suppressed.

Under these circumstances, I propose making an abstract of my first 'Inquiry,' commenting upon it according to the results of subsequent reflection, and appending an analysis of two elaborate memoirs which have recently been published

on this subject by my friends Ercolani and Vella, of Turin, and by M. Colin, of Alfort. I shall conclude with such suggestions for further physiological and clinical inquiry as seem calculated to develop interesting and useful truths; and with a view to aid those who may feel disposed to go deeply into the question, a bibliographical notice shall be appended.

Previously to 1852, the question, why does the horse *not* vomit, had been the theme of discussion, and thus the certainty of erring was involved in seeking a solution to a question wrongly stated; for there can be no doubt, as a respectable number of recorded cases proves, that the horse does occasionally, though rarely, vomit. The cause of this rarity was the object of my research, which I commenced by thus analysing the doctrines previously advanced.

1st. Dupuy in great measure attributed the difficulty of vomiting in the horse to powerful compression of the œsophagus by the muscular fasciculi of the right diaphragmatic crus; but in the same manner as food passes freely down the œsophagus, no obstacle exists to its return so far as the aperture in the diaphragm is concerned.

2dly. Lamorier and Gurlt referred to cardiac valves the impossibility of food passing back into the œsophagus from the stomach; but neither the crescentic valve of the former, nor the spiral valve of the latter, exists in nature.

3dly. I referred to M. Colin's attempt to solve the question by applying to the horse's stomach the theory of the hydraulic press; and I remarked that "such a line of argument is not justly applicable in the case of the stomach and œsophagus, which, as living and active organs, are not regulated solely by hydraulic laws." I shall presently have again to refer to M. Colin's analogical explanation, since he has repeated it in his treatise on 'Comparative Physiology,' and sought to prove it by arguments and experiments equally founded, in my opinion, on insufficient basis, and employed in the solution of a physiological question with inadequate appreciation of vital forces and conditions.

4thly. Bertin's doctrine of a cardiac sphincter came under my consideration, together with the experiments and arguments with which it was sought to be definitively established by the perpetual secretary of the French Academy. Bertin stated, that when a horse's stomach was removed from the body, filled with air or water, and tied at the duodenum, the weight of a man did not suffice to expel the contents from the cardiac orifice. M. Fluorens repeated the same experiment twenty times, and found that even the

jerking pressure of two men did not make a single drop of water escape through the œsophagus. M. Fluorens devised and executed other experiments, by which he was led to the conclusion that Bertin had with perfect correctness referred the reason why the horse does not vomit, to the sphincter formed by the muscular fibres at the horse's cardia, and to the oblique direction of that orifice. However remarkable it may appear, that such observers as Bertin and Fluorens should at the distance of a century fall into the same error on matters of very simple experiment, there can be no question that they did so with the dead horses' stomachs referred to. The notes of a lengthened series of experiments published in my first 'Inquiry,' disprove the notion that the horse's cardia is, even after death, guarded by a barrier insurmountable to regurgitant fluids. But assuming, for the sake of argument, that when a dead horse's stomach is filled with fluid, and closed by ligature at the duodenum, the cardia remains hermetically closed, however forcibly the viscus be compressed, it is matter of surprise that MM. Bertin and Fluorens should not have perceived the fallacy of referring the phenomenon to a cardiac sphincter, and of regarding the oblique insertion of the œsophagus as an accessory impediment during life to the act of vomiting. When, in his third experiment, M. Fluorens found that by mechanically altering the direction of the cardiac orifice, he influenced the outflow of the stomach's contents, he should have lost all faith in his arguments. Had he connected that observation with the fact that, as *muscles*, the stomach and œsophagus have during life the power of altering their relative direction, he must have seen that their vital endowments were an insurmountable barrier to the success of his purely mechanical experiments and arguments. Assuming that water did not flow out of the cardia of the distended and compressed dead stomach, Bertin and Fluorens would have avoided the error of referring the phenomenon to sphincteric action, had they reflected on the post-mortem condition of the lips, the anus, the vulva, and the urinary bladder, which, tight and closed in life, are flaccid and open after death; because sphincters are essentially instruments of life, owing their functional activity to the vital endowment of their constituent muscular fibre, powerless after death.

The fifth doctrine confuted in my first 'Inquiry' was Girard's, a compound of Bertin's and Lamorier's. Girard also attached great weight to the arrangement of the muscular fibres at the horse's cardia, and to the peculiar mode of insertion of the œsophagus—conditions discussed in the fore-

going paragraph. Furthermore, he regarded the position of the stomach near the spine, and separated from the floor of the abdomen by the intestines, as an obstacle to its being sufficiently compressed to reject its contents. But even this objection is frail; the act of parturition in the mare is one of great rapidity; abdominal respiration during disease or severe exercise is, in the horse, very easily effected; in the performance of these functions, and in the voidance of urine and fæces, the abdominal muscles take a very active part; and yet the uterus, bladder, and rectum are relatively as disadvantageously placed as the stomach with reference to the floor of the abdomen; the fact is, that the abdomen being completely full, pressure is transmitted very effectively from its muscular walls to the contained organs.

Having thus examined and disproved the existence of the anatomical conditions which were said mechanically to impede regurgitant evacuation of the horse's stomach, I submitted that as the mechanical part of the act of vomiting is excited by a reflex stimulus from the nervous centre, it behoved those who undertook to demonstrate why the horse rarely vomits, to study two classes of phenomena, the *nervous* and the *mechanical*; for it is quite obvious that if the stimulus to the expulsive effort be wanting, it is useless to attribute the impossibility of the evacuation of the stomach by the œsophagus to mechanical obstacles, for they have no opportunity of coming into operation. Accordingly, I directed my inquiries to the question, What is the action of emetics in the horse? and after noting the fact that in general practice they are never employed, because of the general impression that they are wholly inoperative, I proceeded to analyse the experiments instituted for the purpose of determining the effect of injecting tartar emetic into the horse's veins by Dupuy, Renault, Leblanc, and Mignon. The conclusion to which this inquiry led me, was thus expressed: "there is strong ground for the belief that the horse is unsusceptible of the specific action of emetics, even when directly injected into the circulatory system." In order to settle the question I determined to appeal to experiment, and injected into the jugular veins of a horse and mule of sound constitution, various watery solutions containing from five to fifty grains of the potassio-tartrate of antimony, but without ever witnessing efforts to vomit; whereupon I thus concluded the memoir: "I feel myself justified in stating that all the attempts hitherto made to excite efforts to vomit in the horse by emetics have failed. This unsusceptibility to emetic action, and the very rare manifestation of the phenomena

of vomiting by the horse, must obviously be regarded as cause and effect, and, consequently, as the answer to the question, Why does the horse rarely vomit?"

While discussing this question some months afterwards at Stuttgart, with the learned Hering, he made me acquainted with the results of experiments by Viborg, of Copenhagen, who was stated to have succeeded in producing efforts to vomit in horses, by the injection of tincture of white hellebore into the jugular vein. Moreover, Professor Hering courteously offered to repeat the experiments in my presence in the veterinary school under his direction, an offer which I embraced with delight. In less than two minutes after injection of a drachm of the said tincture into the jugular, the horse became restless and covered with profuse sweat; viscid saliva flowed in large quantity, the pulse became small, the muscles of the neck spasmodically contracted, and those of the abdomen rigid; the latter were, however, much less affected than the former. These symptoms gradually disappeared without the manifestation of any others, and in about an hour the horse had regained his pristine condition. The experiment was repeated with a similar result.

The impression produced on my mind by the just-quoted experiments was, that the injection of white hellebore produced greater and more speedy nausea, and more action of the cervical and abdominal muscles than I previously believed any agent could produce; and, while the phenomena of muscular contraction certainly did not amount to the violent muscular phenomena of the act of vomiting as witnessed in the dog and man, yet it was proved that the horse was not wholly unsusceptible of the nervous influence which is known to precede the act of vomiting; and that once that influence had been produced, some very remarkable phenomena of muscular contraction ensued. Subsequent observation and reflection has confirmed that impression, the result of which is an admission that when I stated in 1852 that "all the attempts previously made to excite efforts to vomit in the horse by emetics had failed," I should have been nearer the truth had I been less general, and substituted the name *tartarized antimony* for the generic expression *emetics*. I at once communicated this criticism of my own opinion to Professors Ercolani and Vella, the secretaries to the Biological Society of Turin, before which learned body my first 'Inquiry' had been discussed. After commenting in most generous and encouraging terms on my anxiety to discover the truth, those gentlemen made my communication

of the experiments with hellebore, the basis of an inquiry, the results of which I shall narrate as succinctly as is consistent with a clear statement of fact.

Ercolani and Vella invited Dr. Waller to perform on the horse, before the Piedmontese Biological Society, the experiments which he had successfully performed at Bonn, on dogs and frogs, of inducing vomiting by reflex movements, excited by galvanizing the superior extremity of a divided *vagus* nerve. The result was not considered conclusive, and a new and modified trial was about to be made, when the receipt of my communication from Vienna led to the adoption of a new plan of experiment, with the combined injection of hellebore, and galvanization of the distal end of the cut *par vagum*. Unfortunately, my learned friends at Turin proceeded to the new inquiry with an extreme, and in my opinion unwarranted, appreciation of Viborg's and Hering's experiments, which they held to prove that the horse is really susceptible to emesis without vomiting taking place, wherefore the obstacles to the performance of that act must be essentially mechanical. I shall subsequently develop the reasons why I consider these conclusions based on insufficient evidence.

All the phenomena which I had witnessed after the hellebore injection, were manifested when the experiment was repeated by Ercolani and Vella, who additionally report having observed violent contractions of the abdominal muscles, synchronous with spasms of the pharynx and convulsive opening of the mouth. In another experiment, the injection of three drachms of tincture of hellebore did not suffice to produce the violent abdominal action, but this became manifest on galvanizing the distal extremity of a previously divided *vagus* nerve. Comparing these symptoms with those reported to have been present in the rare cases in which horses have vomited, the experimenters concluded that the emetic action of the *Veratrum album* on the horse's nervous system was proved beyond doubt. In pursuance of their inquiry those gentlemen injected the tincture of the white hellebore in the jugular vein of a dog, producing extremely violent vomiting; and they performed a similar experiment on the rabbit (an animal which, like the horse, is held not to vomit), and observed violent diaphragmatic and abdominal movements, and opening of the mouth as if to vomit, but not doing so; facts which were admitted as proof that in animals habituated to vomit, such as the dog, injection of white hellebore into the veins produces the reverted evacuation of the stomach's contents through the

mouth; but that no such evacuation occurred, though the necessary muscular efforts were excited, by injecting the same substance into the venous system of animals such as the horse and rabbit, commonly regarded as unsusceptible of emesis.

Without giving any weight to the great practical fact that veterinary therapeutics as specially applied to the horse, altogether exclude emetics, because inoperative; without taking into consideration the futile experimental attempts to excite efforts to vomit by injecting into the veins, the emetic, *par excellence*, tartarized antimony; without reflecting on the extraordinary means to which they had to resort to excite efforts to vomit in horses subjected to experiment; Ercolani and Vella concluded that the horse's nervous system is susceptible of emesis, and that in the domain of mechanical impediment was to be sought the reason why the act of vomiting is in that animal so rare, a conclusion which, with the greatest deference for my learned friends, I cannot but characterise as exclusive, inasmuch as it is a statement of a general proposition on the basis of an extraordinary fact, manifested under peculiar circumstances, and opposed to the results of larger experience obtained in conditions much more natural, and more closely according with comparative physiological and therapeutic observation.

In quest of the *mechanical impediment*, the physiologists of Turin more especially addressed themselves to inquire into the circumstances which led so distinguished an anatomist as Gurlt to affirm the existence of a cardiac valve, a statement to which subsequent observers have almost unanimously denied the real attributes of fact. On compressing a distended horse's stomach, to which about four inches of œsophagus had been left attached, Ercolani and Vella observed that the thick and rugous mucous membrane protruded from the œsophagean orifice, wherefore they entertained suspicion that Gurlt's valve might really originate in the distended stomach, in consequence of the fissure of a fold in the thick and loose cuticular portion of the gastric lining. Their suspicion acquired the strength of demonstrated truth after the following experiment. An aperture having been made in the large curvature of a horse's stomach, a glass plate was fixed to the margins so as to allow an observer to see what occurred at the cardia when the distended stomach was compressed. On perceiving that the folds of the mucous membrane at the cardia became so numerous and close as completely to close the orifice, they, after a few other experimental observations of secondary import concluded that the

obstacle to vomiting in the horse is purely mechanical, and principally due to the insuperable impediment offered to regurgitant gastric evacuation by the large and numerous folds into which the lining of the stomach is thrown, whenever the distended viscus is compressed. The thick muscular coat was held to act as an auxiliary impediment, by preventing the expansion of the larger and thicker internal lining.

For the purpose of brevity and clearness I have not gone into some of the details reported by the experimenters, particularly as I see no reason for entering into a minute analysis of the steps of their inquiry, fallacious as it is in its spirit and foundation. Many as are the reflections suggested by the numerous controversies to which the theme of our inquiry has led during the last 120 years, none is so curious as that which inspires surprise at seeing so many men, habituated to observation and experiment, directly contradicting each other in the simplest matters of fact, and making use of arguments so partial and exclusive, as to be destitute even of *a priori* value in the explanation of vital phenomena, and to admit of complete refutation by comprehensive observation and logical interpretation of physical laws and vital conditions.

The fact that therapeutics, as applied to the horse, exclude emetics, that the great majority of experimenters have agreed upon the inoperativeness of emetic substances even when injected into that animal's veins, did not for an instant suggest to Ercolani and Vella that the horse is really very much less susceptible to the nervous impression of emetics than the animals which vomit, and that whatever its physical inability to the performance of that act, that was as a rule secondary to the vital insusceptibility. On the contrary, so soon as they believed that they had finally excited in the horse efforts to vomit, under the most extraordinary circumstances, and by the most powerful means, they thus argued: the horse is susceptible of the nervous impression of emetics, the horse does not vomit, therefore the obstacle must be mechanical. How certainly and completely does an assumption contrary to fact lead to error. To state as a general proposition that the horse is susceptible of the nervous impression of emetics, is to enunciate an assumption contrary to fact. To argue on that fallacious assumption as if it were a demonstrated truth, must lead to error. It is remarkable that it did not occur to the Turinese physiologists that the very fact of the cuticular coat at the cardiac end of the stomach being very loose and

easily thrown into numerous folds, appears a provision to allow of the rapid and extensive dilatation of the thick muscular investment; and that, consequently, supposing the stimulus to cardiac dilatation to be conveyed to the muscular coat, the very condition which they regard as an obstruction would permit the opening of a capacious channel. When they pressed the dead stomach, and saw the dead, thick, and loose cardiac lining, fold and plug the aperture, they did not take into consideration the fact that in the act of vomiting in the dog, compression by the abdominal muscle and diaphragm is but one of the reflex muscular movements conducive to the rejection of the contents of the stomach; another is the anti-peristaltic movement of the viscus and of the œsophagus, whereby the cardia is opened and the stomach's contents collected near it, so as to be suddenly jerked out by the violent extrinsic compression. The observations of Wepfer, Haller, Béclard, and Legallois, prove these propositions, and it can no longer be matter of question, that the nervous impression of emetics is reflected to the stomach, œsophagus, and pharynx, no less than to the diaphragm and abdominal walls; and that, consequently, any attempt to explain inability to vomit, which, like Ercolani's and Vella's altogether ignores the great indisposition to emetic action, and assumes the stomach and œsophagus to be dead and inert, is inconsistent with the true solution of the problem.

We have finally to examine the teaching of M. Colin, as propounded in his very elaborate physiological treatise. After avowing that "Bertin was in the truth when he regarded the sphincter at the cardiac orifice as the essential obstacle to vomiting in the horse," M. Colin admits that my observations as to the insensibility of that animal to emetics is full of justice, and that it had not been made by the experimentalists who preceded me. But this admission did not prevent him reverting, in 1854, to his old explanation according to hydraulic laws, which I had combated in 1852. The assumption necessary to the application of this theory, that the cardiac sphincter is permanently constricted, is a gratuitous one; and moreover, to the stomach and œsophagus, as living and active organs, cannot be applied the explanation of purely physical phenomena enunciated by hydraulic law. Nevertheless, our author believes the doctrine which I contest, so rational, and so perfectly in accordance with the conditions of the stomach, as not to require experimental demonstration; yet he searched for it, and found it. As to the alleged rationality of the doctrine, I repeat it is not reasonable to assume, before the fact is

proved, that the cardiac muscular fibres are *permanently* constricted. All analogy and physiological knowledge suggest as reasonable that these muscular fibres arranged in alternate circular, spiral, and longitudinal layers, can close or enlarge the aperture they surround, according to the nature of the stimulus they receive; it is certain the aperture is often largely opened for natural purposes, and it remains to be determined by experience whether the opening of the cardia, which is one of the movements concurrent to the act of vomiting, takes place in the horse. This question must be solved by experience, to which M. Colin has appealed, conclusively so in his opinion, without result in mine; and that because he has performed his experiments under such conditions, that their results are not applicable to the question under consideration. Thus he argued that the muscular closure of the cardia is the reason why the stomach cannot evacuate its contents through the œsophagus, from the three following experiments. Firstly, in a horse just fed, he cut through the linea alba and duodenum; through the pylorus he introduced his finger into the stomach, and found that orifice partially open, its border at intervals gently compressing the finger. He then opened the stomach at the large curvature, and found the cardia quite closed; on pushing his finger into the orifice it was forcibly constricted. In a second experiment, performed on a horse that had been feeding for several hours and had just drunk half a pail of water, the anterior flexure of the colon was displaced so as to lay bare the greatly distended stomach which was forcibly compressed with the hands in various directions, without anything escaping through the cardia. The viscus was only partially evacuated, by its contents flowing slowly towards the intestine. "I repeated," to translate M. Colin's words, "this experiment in other horses placed in the same conditions. In one instance, the compression was so powerful as to tear through the muscular coat at the right end of the great curvature. The results were always the same. If the contents of the stomach were fluid, they partially passed into the duodenum; if they were comparatively dry, they became clogged, and only passed into the gut in small proportions. The obstacle is, therefore, at the cardia." I can simply regard these experiments as furthermore substantiating the very well-known fact, that during the early part of the process of digestion the cardiac is *quite*, and the pyloric orifice *almost*, closed. I cannot see how these results, obtained by such violent experiment during the process of healthy digestion, can in any way apply to solve the question of vomiting. The fact that

very violent compression only sufficed partially to evacuate the stomach through the pylorus, even when the contents were fluid, might have suggested to M. Colin that it was precisely as logical to say that the most forcible pressure did not suffice thoroughly to evacuate the fluid contents of a living horse's stomach through the duodenum, as it was to say that such pressure altogether failed to press the contents of it through the cardia. M. Colin was arguing on the functional activity of a healthy stomach and its orifices, after having exposed and handled that viscus in such a manner as certainly to impair, possibly utterly to neutralize the operation of that function. The normal peristaltic movement of the stomach, under the healthy stimulus, suffices thoroughly to empty the contents of the horse's stomach into the gut ; and absolute and comparative observation discloses no condition in the structure of the stomach which can oppose reverted evacuation of its contents through the cardia, provided the abnormal stimulus come into operation, which in other animals is known to excite anti-peristaltic movement of the stomach and œsophagus, and aperture of the intermediate passage, in addition to violent efforts of the diaphragm and abdominal muscles.

Our author performed many other experiments, with a view to defend the position he had taken ; but they are, for the purpose required, amenable to the same criticism as, with much deference, I have ventured to pronounce on the preceding ; and when M. Colin states, *if he be not deceived*, those experiments demonstrate that the obstacle to vomiting in solipedes resides in the cardiac sphincter, I believe *he was deceived* in the reality of his demonstration.

But exclusive as M. Colin represents himself in devising, indicating, and arguing on the experiments above referred to, he is essentially eclectic when exercising the functions of a didactic writer ; and accordingly we find him sum up by teaching, that the constriction of the cardiac sphincter, and of the thick muscular lower end of the œsophages are the chief impediments to vomiting in the horse ; but that we must regard as auxiliary impediments, the smallness of the stomach, its distance from the abdominal wall, its not being subject to great distension under ordinary circumstances, the short period during which alimentary matters remain in it, and finally, the slight degree in which the viscus is susceptible to the exciting causes of vomition ; in exposition of the last statement, M. Colin grants that the introduction of tartar emetic into the digestive organs neither provokes efforts to vomit, nor nausea ; that those phenomena are but rarely and

indistinctly manifested, even when tartarized antimony and other emetics are injected into the veins; that pinching, strangulation of the intestine, and ligature of the pylorus, which so actively contribute to vomiting in carnivora, do not exert any efforts in solipedes. After making these admissions, which are strictly in accordance with facts, it cannot, I think, but be matter of astonishment that M. Colin should have placed the *cardiac sphincter* as the chief obstacle to vomiting in the horse. It certainly cannot operate as an obstacle when no attempt to vomit is made; and as such attempt is, by M. Colin's admission, extremely rare, it follows that the obstructive operation of the cardiac sphincter can only come into operation in extremely rare cases. In the rule, the insusceptibility to emetic action must be the first and chief reason why no vomiting occurs; in the rule, it must be the only reason, because mechanical conditions cannot oppose an act, which neither originates spontaneously, nor is by art induced. Comparing the stomach of a horse and of a dog in the body and on the dissecting-table, it is obvious that the mechanism of the latter must, from its shape and mode of construction, be more simple than the former; it is obvious that extrinsic pressure must produce greater results on the thin, simple, tube-like viscus of the flesh-eater, than on the thick, short, and pouched stomach of the great solipede; but the latter, like the former, has provision for movement, and its construction involves no condition which can act as an impediment to any movement which its nervous affinities may stimulate.

It is matter of regret that we do not know, from accurate observation and analysis, the exact anatomical and clinical conditions of the stomach and systems of horses who are said to have vomited. This might be the theme for a very interesting inquiry; in conducting which, especial care should be taken to determine what are the reasons of the frequent ruptures of the stomach in horses, and what relation those lesions hold to the act of vomition.

I cannot conclude without expressing regret that this communication should have considerably exceeded the limits I anticipated. MM. Ercolani, Vella, and Colin, with experiments and reasoning, combated an experimental memoir which I had published for the refutation of error; I have freely analysed their statements, but I hope I have done so with all the candour and regard due to scientific inquirers, and to the development of interesting truth.

Bibliographical references to the principal memoirs relating to the subject of vomiting in the horse. *Lamorier*, Une mémoire où l'on donne les

raisons pourquoi les chevaux ne vomissent point, 'Histoire de l'Académie Royale des Sciences,' Année 1733, p. 511, et seq.—*Bertin*, Sur la structure de l'estomac du cheval et sur les causes qui empêchent cet animal de vomir, 'Histoire de l'Académie des Sciences,' 1746.—*Bourgelat*, Recherches sur les causes de l'impossibilité dans laquelle les chevaux sont de vomir, at the end of the second volume of his 'Précis Anatomique du Corps du Cheval.'—*Johann Conrad Peyer*, in 'Mercologia sive de Ruminantibus et Ruminacione,' p. 178.—*Haller*, in 'Elementa Physiologiæ,' edit. Lausanne, tom. vi, p. 291.—*Lafosse*, in 'Dictionnaire Raisonné d'Hippiatrique,' vol. ii, p. 139.—*Girard*, Notice sur le vomissement dans les principaux animaux domestiques, in 'Anatom. Vétérinaire,' vol. ii.—*Dupuy*, in 'Journal de Physiologie Experiment. et Path.,' par F. Magendie, tom. i, p. 338.—*Gurlt*, 'Die Anatomie des Pferdes,' in 70 lithographirter Tafeln, von D. E. F. Gurlt, tabula 14, fig. 3, text p. 66.—*Bérard*, in 'Cours de Physiologie,' vol. ii, p. 139.—*Rymer Jones*, Art. Solipède, Todd's 'Cyclopædia of Anat. and Phys.,' O. 735.—*Mignon*, Report on a Memoir by *M. Vallat*, on Vomiting in the Horse, in 'Bulletin de la Société Cent. de Méd. Vét.,' tom. ii, p. 191, et seq.—*Rénault*, 'Bulletin Soc. Cent. Vet.,' tom. ii, p. 219, and 'Bulletin de l'Académie Royale de Médecine,' 1843-44, vol. ix, p. 153.—*Hering*, 'Erbrechen beim Pferd in Specielle Pathologie und Therapie für Thierärzte,' zweite Auflage, Stuttgart, 1849, p. 22.—*Schell*, Einige Bemerkungen über das Erbrechen bei Pferden, in Gurlt's 'Magazin,' vol. xv, p. 133.—*Fluorens*, Note sur le non-vomissement du cheval 'Annales des Sciences Naturelles' and 'Gazette Médicale de Paris,' Année 1849, N^o. 5, 3 Février, p. 79-81.—*Colin*, 'Recueil de Méd. Vét. Pratique,' III, série, tome vi, p. 478, and Article du Vomissement des Solipèdes, 'Traité de Physiologie Comparée des Animaux Domestiques,' Paris, 1854, p. 541, et seq.—*Ercolani e Vella*, Nuovel Ricerche sulle vecchie cagioni che impediscono il vomito nel cavallo lette ell approvate dalla Società Biologica in Torino nella Tornata delli 27 Luglio, 1854, pp. 16.—With reference to the action of Emetics in the Horse, vide *Morton's* 'Manual of Veterinary Pharmacy,' and an Introductory Lecture on Chemistry, in 'Veterinarian,' vol. xiv, p. 767.—*Bouchardat*, 'Formulaire Vétérinaire,' p. 258.—*Percival's* 'Lectures,' and his work on 'Form and Action in the Horse, and the Effects of Medicine in Horses,' p. 31.—*Professor E. Viborg* und *Dr. Scheel*, Versuche mit der Einspritzung verschiedener Arzneien in die adern von Thieren, in *Erich Viborg's* 'Sammlung von Abhandlungen für Thierärzte und Oeconomen,' Drittes Bändchen, Copenhugen, 1802.—*Tabourin*, 'Nouveau Traité de Mat. Méd., Therapeut., et Pharm. Vét.,' Paris, 1853.—*Gerlach*, 'Lehrbuch der Allgemeinen Therapie für Thierärzte,' Berlin, 1853, p. 436-438.—*Hertwig*, 'Praktische Arzneimittellehre für Thierärzte,' Berlin, 1847, Dritte Auflage.

16, UPPER WOBURN PLACE;
Feb., 1857.

GASTRO-INTESTINAL INFLAMMATION IN A COW.

By J. REDWOOD, M.R.C.V.S., Dorchester.

I have forwarded to you a jar containing portions of the abomasum of a cow that I have had slaughtered, seeing that further treatment was altogether useless. You will perceive a large gangrenous spot on the inner coat of the above viscus, which I consider was the cause of the symptoms presented. I have also sent you portions of the ilium and jejunum, which will afford you some idea of the intensity of the spasmodic action with which these intestines were affected. The whole of the small intestines presented the most marked spasmodic condition; in fact, they were like so many muscular cylindrical cords, and impervious to any body larger than that of an ordinary-sized goose-quill.

Now, all the diseased conditions are enumerated in the above brief description. Every other organ—except the liver, which had a little deposit of earthy matter in a few of its larger biliary tubes, a very common condition of the gland—both in the thorax and the abdomen, presented the most healthy aspect. The animal was ill but thirty-six hours.

The following were the symptoms observed and the treatment adopted:

The patient was a dairy-cow, five years old, in excellent condition, living on straw alone for the last fourteen days, five months advanced in pregnancy, and never had been ill before, being bred on the farm.

When I first visited her she evinced all the symptoms of *loven*, and that to a great extent, so much so, that at one time I was about to introduce the trocar, for the purpose of affording relief, yet, knowing the animal could not have had access to succulent diet, I came to the conclusion that this was the effect of the chemical laws acting on vegetable matter, over which the stomachs had in some degree lost their vital influence. The poor animal was in great agony, shown by loud groaning, though rarely lying down; eyes sunk in their orbits; pulse quick and irritable, but not such as to indicate or warrant depletion. Occasionally a quantity of the fluid contents of the rumen were regurgitated through the nose and mouth; almost, it would appear, involuntarily. She also, at intervals, voided a small quantity of commingled aqueous and mucous fluid per anum; although, as before remarked, from the moment she was observed to be ill,

not the smallest portion of ingesta passed the abomasum, which, together with all the other stomachs, was *partially* filled with food in a pultaceous state.

It appeared to me evident that the obstruction to the passage was caused by spasmodic action of the pyloric orifice, the action extending throughout the greater portion, or all, of the small intestines.

Will you favour me with your opinion as to the cause of the circumscribed and intense inflammation of the villous coat of the true stomach, and say if you think it arose from any chemical irritant?

The treatment consisted in the exhibition of Spt. Ammonizæ Aromatic, with the Carbonate; aperients, and at last the chlorides, but all proved inert, no benefit whatever accruing therefrom. Had I suspected spasm to such a marked extent, I should certainly have given large doses of ext. belladonnæ and hyosciami, both in the form of enema and by the mouth. As it was, my treatment was directed solely to the symptoms evinced; and when I found that all the usual remedies were of no avail, as the animal was in high condition, I thought it best to have her destroyed.

[The lining membrane of that portion of the alimentary canal forwarded by Mr. Redwood was throughout in a state of congestion, presenting here and there depressed or cup-like patches, which apparently resulted from ulceration commencing in the sub-mucous tissue. The ulceration had also penetrated, in spots, the substance of the mucous membrane. This condition of parts is somewhat singular, and might have had its origin in the existence of some local irritant.]

TWO CASES OF TETANUS SUCCESSFULLY TREATED WITH HYDROCYANIC ACID.

By J. CUTHBERT, M.R.C.V.S., Leeds.

Case 1.—An aged bay mare, belonging to Mr. Barratt, nurseryman, of Wakefield, fell, and lacerated her knee. The capsular ligament being ruptured, the wound was treated *secundum artem*, and it, to all appearance, healed to my entire satisfaction.

In about three weeks after the accident, I was sorry to find the animal the subject of tetanus. I gave a full dose of purgative medicine, had a sheepskin placed upon the loins, and

directed her to be constantly supplied with sloppy bran mash, and the knee to be blistered.

After purgation had been freely established, I commenced giving injections, night and morning, of hydrocyanic acid, one fluid drachm, in about a pint of tepid water.

After continuing this treatment for a week, a marked change for the better was perceptible. I therefore allowed her a little cut grass, and continued the injections. In the course of a few days she fell down, and was obliged to be lifted up and placed in slings; and when down injured the knee very much, which ultimately terminated in ankylosis of the joint. It was now nearly four weeks since the attack. The tetanic symptoms had gradually disappeared, the animal was perfectly free from any rigidity of muscles, and could move her jaws with the greatest freedom. She was now turned out to grass in a field close at hand; but after the lapse of a few weeks, it became advisable to destroy her on account of the ankylosis of the knee-joint, already referred to; so that after all we were doomed to disappointment, although there had taken place a successful termination of the attack of tetanus.

Case 2.—October 27th, 1856.—I was requested to see a bay mare, three years old, the property of J. Holdsworth, Esq., of Belle Vue. On my arrival, I was informed that she had been out at grass the whole of the summer, and was taken up on account of being "very stiff." I at once saw that it was an extremely severe case of tetanus. She was standing with her head stretched out; the nostrils were dilated, the ears erect, the membrana nictitans protruding, the tail curved to one side, the mouth firmly closed, and a quantity of saliva issued from it, when an attempt was made to open it; the pulse was 48, and full; the breathing quick, with great rigidity of the muscles of the whole frame. I carefully examined her, to see if I could find any marks of injury, and observed a slight abrasion above the right orbit. She was placed in a dark, well-ventilated box, and I gave a full dose of cathartic medicine, inserted a seton over the supposed seat of injury, had a sheepskin placed upon the loins, and left special injunctions that she was to be kept as quiet as possible.

29th.—The bowels have responded satisfactorily; she drinks gruel, and sucks in bran mash, which are purposely made very sloppy; the breathing is more natural. I ordered an injection to be thrown up, night and morning, of hydrocyanic acid, one fluid drachm, in tepid water, one pint.

November 2d.—A healthy discharge is excited by the seton, and the symptoms generally are more favorable. Injections continued.

7th.—The animal is still improving. I had her put in slings during the night, as she had been down, and was unable to rise without assistance.

29th.—She is quite recovered, and no further treatment is required.

In these two cases you will observe that no medicine was given by the mouth, except at the commencement of the attack. I am convinced that cases of tetanus would be more often successfully treated if seclusion and quietude were strictly enforced. In each case about the same quantity of hydrocyanic acid was used, and the amendment began to show itself about the same time in each.

IMPACTMENT OF FOREIGN MATTERS IN THE UPPER PART OF THE RECTUM.

By W. FURNIVALL, M.R.C.V.S., Kingston

ON the 23d of November last, at 9 a.m., I was requested to attend an aged bay carriage-horse, the property of P. Turner, Esq., which was said to have been attacked with colic at 5 a.m. The groom informed me that his master had bled the animal largely, and also exhibited to him an anti-spasmodic draught. Being prevented from responding to this summons at once, I sent by the groom the following draught, to be given immediately:

R Sol. Aloës B. B., ʒvj;
Tinct. Opii, ʒj;
Ol. Tereb., ʒij. M.

At 11 a.m. I visited the patient, and found him comparatively easy. Pulse 65 and full, visible mucous tissues injected, breathing accelerated, extremities rather cold.

History.—The animal has been for the last six years accustomed to the routine of stable management in London. His present owner purchased him on the 9th instant, brought him into the country, and turned him into an orchard for a few hours daily, in which was a heap of lime and cinders. The autopsy disclosed that a morbid appetite had induced the animal to eat a portion of this mixture. At one o'clock

he was again attacked with violent pain; his breathing became laboured; he rolled about in the box, striking his abdomen with the hind feet. Venesection was resorted to, and eight quarts of blood abstracted; Pulv. Opii, ʒiiss, given in a draught, and Ol. Canth. freely applied to the abdomen; enemas were thrown up, previously removing all the fecal matter I could by the hand, and the general comforts of the animal were directed to be attended to.

At 7 p.m., no evacuation having taken place since 5 in the morning, I ordered him

℞ Sol. Aloës B. B., fʒiv;
 Ol. Crotoni Tig., gtt. xxv;
 * Pulv. Opii, ʒj. In haustus.

Repeat the enemas, and allow him three quarts of hay-tea.

At 12 p.m., on revisiting my patient, I found that the medicine had not produced any effect. The animal urinated freely; and noticing his frequent but ineffectual attempts to evacuate the bowels, I told the owner it was my opinion, that either some very hard dung balls (scybala), or a calculus existed in the intestines, and I intended to remain with him during the night.

November 24th.—At 4 a.m., the bowels not having responded, I administered

℞ Ol. Lini, Oiss;
 Ol. Crotoni Tig., gtt. xl. in gruel.

Repeated the enemas, and applied Ol. Canth. cum Sol. Tereb. Crotoni to the abdomen. Up to 10 a.m., no apparent change had taken place, the horse remaining quiet for at least four hours. The second blister had produced full action, still the bowels did not respond; I therefore ordered him an hour's walking exercise in the paddock, and on his return to the box threw up medicated enemas, and gave him some chilled water and a bran mash.

At 2 p.m., finding the bowels so obstinately constipated, I repeated the draught as before, and left him till 10 p.m., when on entering his box, I ascertained his pulse to number 104 in the minute; the breathing was laboured, the mucous tissues of a dirty yellow colour, the extremities extremely cold, and cold perspirations bedewed his body. He now commenced walking round his box, and continued to do so, often straining violently to void fæces, until 4 a.m. of the next day, when death terminated his sufferings.

Autopsy.—The contents of the chest normal. The liver much enlarged and flabby. The coats of the stomach and

intestines attenuated; and at the upper extremity of the rectum was firmly impacted a mass, consisting of layers of lime and fine cinders, which had become so hard as to require a spade to divide it: no nucleus existed in it.

I confess I was not a little surprised to find such slight traces of inflammation pervading the intestinal canal.

RUPTURED STOMACH OF A COLT.

By the Same.

A SOMEWHAT similar case of ruptured stomach in a weaning colt, to that recorded by Mr. W. Taylor, in a recent number of your Journal, occurred in my practice on the 16th of November last.

A cart-colt, 7 months old, was purchased by Mr. E. Jones, of Downton, at New Radnor Fair for £16. A few days previous, on arriving at his new quarters, he was placed with other colts into some good keep, and on the day before mentioned, at 7 a.m., his owner noticed him lying down, and occasionally "squatting" on his haunches. I was sent for, and soon arrived at the farm. On entering the field I saw the colt up and pawing the ground violently with his fore feet alternately. The prominent symptoms otherwise were accelerated respiration, discharge of frothy matter from the mouth, frequent eructations, pulse 45 per minute, and the abdomen painful on the application of pressure to it. After watching him for about 10 minutes, I proceeded to diagnose the case; and believing it to be rupture either of the diaphragm or stomach, I refrained from adopting any treatment, being convinced it would be useless. At 6 p.m. the owner sent a messenger to inform me that the colt was dead, and on the following morning I made a *post-mortem examination*, when I found the whole of the viscera of the chest and abdomen, with the exception of the stomach, healthy. In this last-named viscus was a rent of nearly six inches in length; and its contents, consisting of masticated hay and grass, had escaped, and were intermingled with the intestines.

CARIES OF THE HIP-JOINT.

By E. A. GIBBON, M.R.C.V.S., Malvern.

A CASE lately came under my notice, although not professionally, of a horse that was lame in the off hind leg. The marked symptom was his continually holding the leg off the ground when standing, showing that he was suffering pain, which his external appearance also indicated, as he was very poor. The horse had been fired over the hocks, which, in my opinion, although this I kept to myself, not being asked for it, was an error in judgment, for I considered his hocks to be perfectly free from any disease, at least that was visible by external examination. The horse was only slightly lame in the walk, and did not flinch, or show the slightest lameness in drawing a heavy load up hill, which he had to do very often. From merely seeing the horse occasionally, it belonging to a neighbour, I considered the case to be one of rheumatism; yet I must say, in self-defence, that this was only an opinion that flashed across my mind: nevertheless, I felt convinced the disease was not in the hock. The owner told me the animal had been thrown down while drawing a cart-load of bricks, and that he was then hurt in the hip. Knowing how erroneous, oftentimes, the information derived from such parties is, and as nothing was to be seen externally to indicate such being the case, I allowed it to pass unnoticed. The other day, missing my poor horse, I inquired what had become of him, and the owner told me that he had had him killed, and afterwards he opened the hip-joint to see what was the matter with it. He also informed me that the ligament within the acetabulum was quite destroyed, and that the cup-like part of the joint was so much eroded that the end of the other bone could easily slip in and out of it. There was no dislocation perceptible in the living animal, but the femur may have been kept in its place by the tendons, muscles, &c., or the owner may have made a slight mistake in his post-mortem examination.

I should like to ask some of the readers of the *Veterinarian*, who are practically acquainted with the diseases of the acetabulum-joint, how we can correctly diagnose these cases. If we have disease of the muscles, it is generally detectable by external manipulation; and rheumatism may be known by its periodical attacks. I think it is the same with diseases of the patella. But how shall we diagnose a case quite cor-

rectly, as to whether it is caries in the bones of the hock or caries in the acetabulum-joint? I should further like to ask the practical readers of your journal, if they do not consider firing for bony enlargements to be malpractice, such as bone-spavin, ringbone, &c.? And if the use of antiphlogistics, setons, &c., would not be the most scientific mode of treatment? As to employing counter-irritants for the purpose of drawing the inflammation from the seat of its first attack, this, it appears to me, is based on mere conjecture. And as to corrugating the skin with the firing-iron, so as to cause an absorption of the bone; the pressure thus caused too often acts as a mechanical irritant, thereby increasing the disease; and we all know that bone will become absorbed in time: and I believe that nothing but time will cause its absorption to any amount.

ON THE CASTRATION OF HORSES IN INDIA.

By W. J. MARSHALL, V.S., 2d Brigade, Bengal Horse Artillery, Lahore.

GENTLEMEN,—As the practice of veterinary medicine in this country necessarily differs somewhat from that at home, it may not be uninteresting to your readers if I offer a few brief remarks upon a subject of some importance, particularly to the veterinary surgeons of the Indian army—namely, castration. In England I am aware that the performance of this operation upon *aged* horses is considered rather a serious matter; and, except under peculiar circumstances, it is seldom done. The owners of horses always, and professional men frequently, object to it, as being attended with considerable danger to the animal's life. Now in India nearly all the horses are stallions. Only two out of the ten regiments of light cavalry in Bengal are mounted upon geldings. In the Horse Artillery, Light Field Batteries, and the other light corps of cavalry, there are only about 15 or 20 per cent. geldings, and most of these have been castrated either on account of vice or the occurrence of scrotal hernia. Officers commanding regiments or troops frequently send horses to the hospital to be gelded, as the only means of curing them of vicious or dangerous habits. We almost invariably operate without attaching any importance to the age. I have had patients of this kind as old as seventeen years. Another source of experimental knowledge in this

operation is afforded by the prevalence of scrotal hernia. Of course, in nine out of ten of these cases we remove the testicle of the affected side after the successful reduction of the tumour. A large number of such patients have passed through my hands during the two years I have been in the country, and I am happy to say that I have never lost one. I must confess that I was rather nervous about the result of my first half dozen cases; not that I had any reason to be so, but simply because I had not shaken off my English notions on the subject.

With reference to the best mode of operating in India, I must say that I prefer the employment of the actual cautery. I have tried both it and the caustic clams at the same time, two patients by each plan, and the result was unfavorable to the clams. There was more local swelling, greater constitutional disturbance, and the cases were much longer in hospital. Those horses upon which the cautery was used were generally at work in from fourteen to twenty days. They might, indeed, have left the hospital sooner, but the scrotum would not have been perfectly healed. I know that in England horses have been at work within six or seven days after the operation, but it is not right to strike them from the sick-list so soon. In stating that I castrate with the actual cautery, I do not wish to be understood to say that I use it only, far from it. I apply it as little as possible. I open the scrotum with the knife, and, after the steel clams are adjusted, sever the testicle from the cord by the same means, simply using the heated iron to close the mouths of the bleeding arteries previous to liberating the parts.

When I left old England I was prejudiced in favour of the clams, and commenced my career here with them, but in a very short time I abandoned their use. I have seen ligatures tried, although I have not tried them myself in India. The result was not satisfactory.

I am so convinced of the superiority of the knife and actual cautery together, that I frequently operate in this way after hernia. Of course I allow a day or two to elapse between the returning of the intestinal mass and the excision of the testicle. My thus opening the tunica vaginalis, under such circumstances, may appear to many rather a bold proceeding, but I have never had an unfortunate case. The plan was suggested to me by a professional friend in the cavalry, who had practised it himself, and I have never had reason to regret my adoption of it.

In conclusion, I may state that, although I admit there is some danger attending this operation, and that it is greater

in the case of old than of young horses, I am convinced that the evil results anticipated are generally very much magnified.

There are two facts connected with geldings in India which I may as well mention. First, they are, as *compared to stallions*, exceedingly shy, and particularly at night; secondly, if castrated at the beginning of the cold season, they have very rough coats throughout the year ever afterwards. This holds good as a rule, although there are exceptions, of course. One of my own horses (a gelding castrated as above described) is a good example of this. He looks as if he were covered with wool instead of hair. We might probably notice these circumstances at home if there were as many stallions as out here to compare geldings with.

If you think my opinion worthy of insertion in your columns, it is at your service. It may appear very strange that veterinary surgeons do not contribute more to your pages. The fact is, that this climate completely prostrates one, both mentally and bodily, for eight months out of twelve; and during the other four months we are too much engaged in endeavouring to recruit our health, to think of writing long letters on professional matters.

I am, &c.

CANCER OF THE STOMACH OF THE HORSE.

By E. COLEMAN, M.V.C.E., Sutton.

ON the 22d of October 1856, a yearling, the property of Mr. B—, was brought to my infirmary, which was reported to have been unwell for several weeks past. The chief symptoms presented were as follows. The skin looked very unhealthy, the hair being turned the wrong way; the appetite was much impaired, the bowels were confined, and the tail was drawn in very close to the anus; the pulse was natural, the eyes dull. I administered aperient medicines for three or four days, until purging to a slight extent took place. The fluid fæces were very offensive, and mixed with much mucus. At times, the eyes had a bright glassy appearance, at others they were rather dull. Subsequently, I gave tonic and stimulating agents, when the appetite began gradually to improve. At intervals laxatives were substituted. The animal continued to improve for twelve or thirteen days, when constipation set in again, and he evinced much pain in the abdomen, which he expressed by continually looking

back at the flanks. The tail was still drawn in very close, the breathing slightly affected, yet the pulse did not vary much, although in general it was rather small and somewhat wiry. The countenance at times was very haggard. I gave a moderate dose of physic, which operated rather freely, and followed this up with tonic and stimulating medicines, combining small doses of iodine, under which treatment he improved very fast, and ate much better than he had done before. For two or three weeks he continued to eat four or five feeds of corn, mixed with chaff, per day, and was allowed to run in the paddocks; in fact, he got quite fresh and playful, till one night he was attacked with paralysis of the hind quarters, affecting chiefly the near leg, but still the appetite was not much impaired. He was so lame for four or five days as not to be able to come out of the box. This, however, by applying fomentations and embrocations to the limbs, soon got better. At times he had a peculiar way of standing and stretching himself, as though he was going to stale, (he, however, showed no pain when he did stale.) I gave nitrate of potash in his water, which he drank freely night and morning. The appetite continued good, and he improved in condition, and was now allowed to go into the paddocks again, where he would gallop and jump about and seemed to all appearance quite well. This continued until the 2d of December last, when all at once he refused to eat anything, and was constantly looking round at his flank on the near side, and in three days from this time he was little more than a skeleton. At times he would appear quite unconscious, and so weak that he could scarcely walk; the eyes had a very dull appearance, the pulse was very thready, and a peculiar grinding of the teeth everyfew minutes took place, and occasionally he would lie down with his nose turned back against the near flank. The intestines kept rumbling as though they contained a large quantity of wind; in fact, flatus was continually escaping from the anus, which was by it kept open; the fæces were relaxed and very slimy, and the animal would not take the slightest notice of anything put before him to eat. In this state he continued till the 9th, when I destroyed him by opening the carotid artery.

Post-mortem appearance.—On removing the skin, the muscles were of a peculiar yellow colour. The small intestines were quite empty, and the duodenum so much contracted that you could scarcely get your finger down it. The remainder of the small intestines were all more or less contracted; the large intestines contained some fluid fæces. The

mucous coat, throughout the whole extent of the intestines, both large and small, was covered with thick, slimy mucus, which came off in large flakes. The rectum was very much contracted in two or three places. The left lobe of the liver was slightly diseased at its lower surface; the peritoneum covering this part was much thickened, and it presented a very dark colour approaching to black. The right lobe was pretty healthy. The spleen was also healthy. The left kidney was enlarged, but not to any great extent. The bladder was free from all indication of disease. Emphysema of the lungs had taken place to a considerable degree, especially at their anterior portion. On the outer surface of these organs, just under the pleura, there were a number of white spots about the size of peas, which appeared like flakes of mucus. The heart presented nothing abnormal. The brain was not examined. The stomach I have forwarded to you for examination.

[We are indebted to Assistant-Professor Varnell for the above case, who states that having microscopically examined portions of the diseased stomach, forwarded by Mr. Coleman, he finds them to present all the characters of hard cancer.]

WORMS IN THE KIDNEY OF A COLT.

By T. COUCHMAN, V.S., Wadhurst.

ON the 26th May, 1856, I was requested to see a sucking colt, of the cart breed, one month old, belonging to Mr. Lutter, a large farmer of this place. I found it lame from an abscess which had existed in front of the near hock. As pus was issuing from two or three places, I made one pendulous opening, and applied a digestive, which soon effected a cure, except a little thickening, which was removed by the Ung. Hydrarg. Binioidid.

July 10th.—The colt at this time began to lose flesh, I therefore advised that it should be weaned, and fed on crushed oats and bran; and I heard no more of it till September 2d, when general dropsy set in, which yielded to the usual stimulating and tonic remedies; but the appetite still remained impaired, and he continued to lose flesh. This went on till the 26th September, when ulceration of the mouth prevented him from eating any food at all. For this we used detergent

gargles, and gave aperient powders; our treatment being directed to the digestive organs. A good quantity of gruel, &c., was allowed. The mouth soon got well, but the animal did not recover his appearance; and on the 27th November he was seen to pass a small quantity of urine mingled with some blood and pus. This led me to conclude he had diseased kidney or kidneys. Within a week he was so low in condition and weak, that I advised his owner to destroy him. This was at once done, and I made an examination by candle-light, it was consequently only a rough one; but I found all the organs healthy with the exception of the left kidney. This had attached to it a large tumour, which was filled with hard cheesy matter, and in which was found a quantity of small white worms. This case teaches us that the closest observer as to the cause of disease will sometimes be perplexed. You will have received the kidney and the tumour by this time, and would greatly oblige me by describing the nature of the affection.

[The morbid specimen did not come to hand so soon as was expected, it therefore had undergone so much decomposition as to prevent us making so careful an examination as otherwise would have been done. It appeared to consist of an enlarged mesenteric gland, to which was attached a portion of intestine, as well as the kidney. No evidence was presented of the worms having occupied the interior of the enlarged gland, but rather that their habitat had been the intestine. The altered state of the gland would seem to indicate that its origin was associated with a scrofulous state of the system.]

OPERATION OF TRACHEOTOMY IN A STEER, FOLLOWED BY ACCIDENTAL DEATH.

By the Same.

My second case was that of a year-old Sussex steer, belonging to the same gentleman. I was called to see it on the 6th December, 1856. I found it had great difficulty in breathing, arising from the throat and glands being much inflamed. I at once opened the trachea, bled him, and administered a dose of opening medicine. Soon after he became quite comfortable, from being able to breathe freely; I therefore left him in order to return home for a tracheotomy tube,

when, on returning, to my astonishment, I found he had leaped out of the stall and over a gate; he then ran down a large meadow, and jumped into a deep pond; three men went in after him, but before they could render him timely assistance, he was floundering in the water, and I suppose a sufficient quantity of it got into the lungs so as to cause death. I mention this case as being a somewhat remarkable one in its termination. Should you think the excited state of brain arose from the disease or the operation? This is a common disease with young stock in this neighbourhood, but I never saw one before inclined to move about after being attacked with it. *I call this a decided case of suicide!*

ACCIDENTAL POISONING OF A DOG WITH NUX VOMICA.

By G. LEWIS, V.S., Monmouth.

ON the 13th of January last, there was forwarded to me, for post-mortem examination, a sheep-dog which had died that day under the following circumstances. At 11 o'clock a.m. the animal was seen apparently well, but within half an hour afterwards he was perceived to be ill, and died in about two hours. When first observed to be ill, it was "convulsed," "panting for breath," and "dragging its hind legs." This continued at intervals for an hour, when he appeared to be "a little better;" but again the paroxysms became greatly aggravated, and he died in great agony.

I saw him in about two hours after death. The body was still warm. The hind extremities were quite inflexible. I tried, but could not by any force I could apply, bend the hocks. The intercostal muscles were literally as hard as "a board." The eyes were wide open, and the pupils dilated, the eye itself having a glassy appearance. The fore extremities, I would observe, were not so stiff as the hind ones.

The examination disclosed the following:—The stomach contained portions of a rabbit, which had evidently been eaten very hastily. A brown powder was mixed with the ingesta, and spread upon the inner coat of the stomach, which presented traces of intense irritation and inflammation, as did also that of the duodenum. The blood in the larger vessels was more fluid than usual. Both the ventricles and

the auricles of the heart were full. These were the principal appearances. I regret that time would not permit me to make a more minute and accurate investigation.

The contents of the box sent by post to you yesterday were obtained in the following manner:

The contents of the stomach were first treated with a dilute solution of oxalic acid. Being then allowed to stand for twenty-four hours, having been frequently agitated, it was filtered. The contents of the filter were washed with soft water, and the washings added to the filtrate. The whole of the liquid was then boiled and filtered through paper; animal charcoal was next added; the whole frequently agitated for twenty-four hours, was well washed with cold water, and the charcoal received on paper. The powders now enclosed are—No. 1. A very small portion of the “brown powder” obtained from the coats of the stomach and the duodenum, by washings and filtration. No. 2. Some of the same powder, after having been subjected to the action of oxalic acid.

The object of my inquiries as to the nature of the poison, is not for the purpose of bringing an offender to the bar of justice, for it would be difficult to believe that any person could be guilty of an act so base and cruel as to poison such an inoffensive animal and general favorite as the poor dog in question was; but rather to convince men of the danger they are subjecting their fellow-creatures to by meddling with the most deadly poisons as though they were articles of diet.

The gentleman to whom the dog belonged, and who owns an immense tract of land and preserves, informs me that it is customary with the keepers to place about *nux vomica* for the destruction of vermin, and that he has little doubt but that the poor animal fell a victim to this practice.

Now, sirs, you will, I have no doubt, lend your valuable aid and influence in preventing thus the destruction of valuable animals,—and it might have been human life,—through recklessness and ignorance. For suppose that a poor man had found the rabbit instead of the unfortunate dog, he would, in all probability, have taken it home to a hungry family of seven or more in number, and it would have been cooked and eaten. The consequences are too fearful for the mind to dwell upon. It may be necessary to preserve game by destroying vermin, but let it not be done at the risk of sacrificing human life.

[From the matters sent to us, sufficient indication was obtained of the existence of the alkaloid strychnia; therefore

we hesitate not to express our conviction, that nux vomica was the poisoning agent. The symptoms, as stated by Mr. Lewis to have been present, would also lead to the same conclusion.

We heartily join with him in the strongest condemnation of the practice of placing poison in such places as woods, preserves, &c., for the destruction of "vermin," since these alone may not be destroyed by it, and of this a proof was given in our last number. It may not be that our fellow-creatures would thus become affected, as the flesh employed for the purpose would rarely if ever be fit for food. Or should it be, as it was in this case, that a part of a rabbit or a hare is used, it would be washed, &c., before cooked: still it is too great a risk to be run. Dogs and other useful animals certainly may be thus accidentally killed, while the so-called vermin, such as weasels, polecats, &c., might escape. To lessen the number of these last-named animals, various other means may be resorted to, and which are not open to the serious objection of poisoning, and with these most keepers are perfectly familiar.]

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

(Continued from p. 82.)

PANCREATIC SECRETION.

THE structure of the salivary and pancreatic glands being identical, anatomists have always considered the latter as forming part of the salivary apparatus, and most physiologists or chemists have recognised no difference in the composition and uses of the fluid poured into the mouth and that of the pancreas poured into the duodenum. Bernard was induced to experiment on the latter secretion from having observed that fatty matters passed on unchanged through the stomach; and that in the rabbit, whose pancreatic duct opens on the mucous surface of the intestine, at eight or ten inches beyond the biliary duct, fat was modified only beyond the seat

where pancreatic juice mixed with the chyme, and that then it was capable of absorption. In higher animals the duct of the pancreas opens into the duodenum near the pylorus, and the fats are changed higher up than in the rabbit.

Bernard gives an historical sketch of the writings on the pancreas and its secretion, and the most important are those of De Graaf, Magendie, Tiedemann, and Gmelin, and of Leuret and Lassaigne. All these gentlemen collected the pancreatic juice; Tiedemann and Gmelin obtained it from the dog and sheep, and they said the pancreatic juice was a complex fluid very different from saliva, having an acid reaction, and containing albumen. Magendie, who was one of the first to collect the fluid, had determined its alkalinity, and proved it was coagulable by heat. But nothing was absolutely known of the properties of pancreatic juice before 1846, when Bernard undertook his experiments upon it.

The pancreas is not always single, and there is often a detached portion, or "lesser pancreas," generally behind the anterior mesenteric artery. Bernard says that there are always two ducts, but the smaller one is sometimes obliterated. Several woodcuts in M. Bernard's work illustrate in a most complete manner the arrangement of the two ducts, and the method adopted to procure the secretion by fixing glass or silver tubes in the pancreatic duct. The abdomen is opened in the right hypochondriac region, and the tube once fixed is made to project through the external wound, and a bladder is tied on to it. A stopcock is attached to the bladder, so that the latter may be readily emptied as fast as it is filled. Many precautions must be taken to ensure success and avoid sources of fallacy. The sensibility of the pancreas is so great, that the secretion is easily modified or completely arrested for an indefinite period. The pancreatic juice is really to be studied in its normal and in its abnormal conditions; and when the operation performed to procure it does not affect the animals much, and the fluid is pure, we find that it is secreted at intervals, beginning when digestion commences, and continuing some time after the gastric juice has ceased to flow. Blood is more abundantly supplied to the gland when the juice begins to flow; and when the organ is at rest it loses its pinkish or crimson colour, and becomes pale.

Circumstances affecting the digestive function in general have a special influence on the pancreas, and modify its secretion; such is not the case with the salivary glands and their products. The pancreatic juice may, like every other secretion, be found to contain adventitious substances that have

accidentally entered the blood. Thus, iodide of potassium may be eliminated from the system by the pancreas. It is not so with every salt, the prussiate of potash, for example, never being seen in the pancreatic juice.

The pancreatic secretion is formed during intra-uterine life, but we are at a loss to account for its uses then. It is difficult to determine what nervous influences affect its production; a dose of ether excites it, and pressure on the abdominal viscera likewise tends to its increase; the efforts of vomiting stop it.

PHYSICAL AND CHEMICAL PROPERTIES.—The normal product of the pancreas is colourless, limpid, viscid, and glutinous. It has no characteristic odour, and, placed on the tongue, it affords the sensation of a viscid and slightly saline fluid, much like the serum of blood. If warmed, it coagulates in masses of a striking white colour. The organic constituents of the pancreatic juice are precipitated by nitric, sulphuric, and hydrochloric acid; by the metallic salts and alcohol. The acetic, lactic, and *dilute* hydrochloric acids, do not coagulate it. Alkalies have no influence on it except that of re-dissolving the organic substances previously precipitated by the aid of warmth, of acids, or alcohol.

The chemical properties above referred to, led Magendie, Tiedemann, and Gmelin, to believe that the pancreatic secretion acts like albuminous matters in general. Physiologically, there is no relation between an albuminous liquid and the pancreatic juice. The coagulable principle is that which establishes the difference between the latter and saliva, whereas the saline constituents are nearly the same in both.

The pancreatic juice contains from 90 to 92 parts of water in a hundred. The remaining 8 or 10 parts are made up of salts and a peculiar organic element which distinguishes the pancreatic juice from all other secretions of the body, though the proportion of water and saline substances may be the same.

The solid residue obtained by evaporating a quantity of the fluid is found to contain from 90 to 92 parts per cent. of organic matter precipitated by alcohol, but holding a little lime in combination. The salts procured are the carbonate of soda, the chlorides of sodium and potassium, and the phosphate of lime.

The solidifiable organic element upon which the active properties of the secretion depend, holds a position, as an albuminoid principle, between casein and albumen, possessing some properties of either, still not being a mixture of the two. It may be precipitated by alcohol, re-dissolved by

water, and thus an artificial pancreatic juice is formed. One of its most remarkable and important characters is, that on decomposing, it becomes red if exposed to the action of chlorine, and this may be looked upon, according to Bernard, as a sure test of the presence of pancreatic juice in the intestine, and as a means of proving the existence of the pancreas in some of the lower animals.

USES.—The pancreatic secretion acts on all alimentary matters, but in different degrees, and under special circumstances. Fatty substances are only dissolved and absorbed in the intestine beyond where the pancreatic duct enters it, or only when the secretion mingles with the chyme. By artificial digestion, we find that fat is converted into glycerine and fatty acids, and the only liquid entering the intestine capable of acidifying and emulsifying fats, is the pancreatic; so that it is the chief agent engaged in the preparation of chyle. This is proved by the fact, that if the secretion of the pancreas be suppressed, the fatty matters remain unaltered in the small intestines; and the chyloferous vessels are found to contain an opaline fluid, peculiarly poor in fatty principles. As long as the secretion is suppressed, all fat is eliminated with the fæces in its unaltered condition.

The secreting power of the pancreas has been destroyed, as well as the structure of the gland, by injecting substances into the duct; and the symptoms manifested, were those observed in diseases of the pancreas in man, viz., voracious appetite, emaciation, and the presence of unchanged fat in the fæces.

Physiologists are not agreed in opinion as to the method of absorption of fat in the intestine. It is, however, known for certain, that in mammalia it is carried into the circulation by the lacteals. Pequet proved that fats were poured directly into the venous circulation, without passing through the mesenteric veins and the liver; and that in the other classes of vertebrate animals, viz., in birds, reptiles, and fishes, whereas the lymphatics of the intestine are few in number, fat is absorbed by the portal system of veins, and carried directly into the general circulation through the veins described by Jacobson, and named after him, which pass from the vena porta to the inferior vena cava, and which traverse the kidneys;—thus, again, the fat does not reach the liver, where it would be modified or arrested in its progress.

It has before been said, that the pancreatic juice transforms fat into glycerine and a fatty acid. The acid is never found in the chyloferous vessels, so that it is perhaps neutralized in

the intestine, and the neutralizing agent is probably the bile.

Bernard does not look at chyle in the light that it was considered by the ancient physiologists, as the quintessence of the alimentary substances, destined to repair the body's waste. Chyle is often only lymph mingled with fat, so that the saccharine and albuminoid principles of food are absorbed by the mesenteric veins, and pass through the liver before reaching the lungs. Fatty substances are absorbed by the chyliiferous vessels, and therefore enter the systemic veins, and proceed to the lungs, without having previously passed through the liver. There is no doubt that some fat is taken up by the mesenteric vein, as well as by the lacteals, so that the differences in the materials absorbed by veins and lymphatics must not be accepted as absolute.

The pancreatic juice acts on all alimentary substances more or less, but next to its property of emulsionating fat, is that of modifying amylaceous substances. When the pancreas is destroyed in dogs, and these animals are fed on boiled potatoes, these are passed with the fæces, just like fat, in the unchanged state.

If an animal be killed shortly after it has been made to swallow some food containing starch, the latter is found in the stomach, turning blue on the addition of iodine, and not reducing the tartrate of copper and potash; whereas, in the duodenum, all trace of starch is lost, and sugar is discovered after the pancreatic secretion has mingled with the chyme.

The pancreatic juice has another important use which remains to be spoken of; and that is, a peculiar action on nitrogenized substances. If raw meat be placed in some of the juice, the meat speedily softens and putrefies. The same occurs with albumen or casein in the raw state; but if the azotized principles are previously boiled or acted upon by the gastric juice, then they are absolutely dissolved by the secretion of the pancreas. The pancreatic juice therefore serves many purposes, and acts on every kind of aliment.

HEART DISEASES.—There are several cases of diseases of the heart recorded in the *Veterinary Journals* for 1855, and which journals we have already almost sifted for new and interesting matter. Reichte, in the 'Repertorium der Thierheilkunde,' at page 304, says that he had an ox for a short time under treatment, and which ox presented the following symptoms, viz.: enormous distension of rumen by gas, diarrhœa, great dulness, laboured respiration, small

pulse, &c. Reichte recommended the animal to be destroyed. He found *sarcomatous* growths projecting from the auriculo-ventricular valves, and a peculiar form of obliteration of the pulmonary artery, owing to a similar growth from the semilunar valves, so that the circulation of blood was rendered impossible.

Curdts has described another case of degeneration of the heart in an ox. This communication is published in the 'Mecklenburgh Journal' and in the 'Repertorium.' The animal presented symptoms like those of pleuro-pneumonia, and was slaughtered. The lungs were found to contain abscesses, tubercles, &c.; and in the seat of the heart were found lardaceous growths, amounting to sixty-two pounds in weight, and on cutting into them there appeared in the middle the healthy heart, but much diminished in size. No trace of pericardium could be found.

Three instances of instantaneous death are recorded as occurring in cows as the result of cysts and abscesses in the substance of the heart. Laubréaun found in one of these cows three cysts of the size of hazelnuts, all situated in the septum; in another cow there was a cyst in the septum about the size of a lemon, and in both cases the blood in the heart was fluid. Leblanc found, in the third case, an abscess containing from three to four ounces of pus in the left wall of the heart, and an exudation on the surface of the heart, with about two pounds of serum in the pericardium. It was uncertain whether death was immediately caused by the condition of the blood in the cavities, or in consequence of the morbid products in the substance of the heart.

The other interesting cases recorded were published in the *Veterinarian*, the one by Mr. Blakenay, and another, a very singular one, by Mr. Parker.

An essay of mine was published in the *Lyons Veterinary Journal*, on ruptures of the azygos vein in oxen killed, as they generally are in the Italian slaughter-houses, by division of the spinal cord. My brother has drawn attention to the facts I observed, in his 'Researches in Pathological Anatomy,' at page 12; and the following paragraph is transcribed nearly verbatim from my brother's work: I first observed in the slaughtered animals, that when the thorax was opened, circumscribed clots existed between the pleura and vertebræ covering the azygo-vein; the blood sometimes trickling beneath the serous membrane. On dissection, jagged ruptures of the blood-vessel were discovered. My friends Professors Maffei and Balboni, having sought from me an explanation of the fact, I suggested that the instant the animals

are pithed, the walls and contents of the thorax are paralysed, the heart becomes an inert bag filled with fluid, the jerk of which, as the animal falls, causes rupture of the containing vessel at its weakest part; and this is, in truth, the vena azygos, whose walls are thin, and only protected by the pleura. At my suggestion, Professor Maffei instituted a series of observations to determine the frequency of the lesion under consideration; and, with his customary courtesy and exactness, thus communicated the result: "From the 1st of June, 1854, to this date (28th May, 1855), 3095 oxen and cows were killed in the public slaughter-houses. I have met with the rupture of the azygos in fifty-seven of these animals; these ruptures occur in various parts of the said vein; at times, where the intercostals join it, and at others, where the vein curves round, empties itself into the anterior vena cava. Such lacerations seem to occur about the same number of times in either of these situations; they bear the character of regular tears, inducing an effusion of blood between the laminae of the mediastinum, or beneath the parietal pleura. Sometimes the vital fluid flows into the thorax itself.

My brother considers the instances of rupture of the azygos as bearing on the cases of rupture of the heart by contrecoup, and of which but one is recorded in the horse, and that by Mr. Parker, in the *Veterinarian* for 1855.

Diseases of the heart in animals, and especially in cattle, are very common but rarely diagnosed, and most of them completely elude detection. I have many drawings of polypi in the heart growing from the auriculo-ventricular valves, of deposits beneath the endocardium; of tumours outside the heart consisting in masses of cysts, and due to the development of hydatids of the *echinococcusveterinorum*. The valves of the heart are often diseased; and there are two cases, one in Alfort, and another in the museum of the London Veterinary College, of calcification of the walls of the left ventricle, the degeneration having extended to the complete induration of the ventricular septum. It is difficult to account for the blood's circulation through the system in these cases. The flow is languid, but enough for the maintenance of nutrition and the support of life.

The most common cause of diseases of the heart in cattle, is the passage of needles from the reticulum through the diaphragm.

21, DUBLIN STREET, EDINBURGH.

(To be continued.)

Facts and Observations.

THE FRENCH INTERNATIONAL EXHIBITION OF BREEDING STOCK AND AGRICULTURAL IMPLEMENTS.

THE government of France has decided that the Universal Agricultural Exhibition, which was to have been opened on the 1st of June next, at Paris, shall not take place this year; as many remonstrances have been addressed to the Minister of Agriculture, Commerce, and Public Works, with reference to the very short interval which would separate it from the meeting of 1856.

DECOMPOSITION OF URIC ACID IN THE ANIMAL ORGANISM.

Dr. NEUBAUER finds, from experiments with rabbits, one fed upon bread, the other upon carrots, that, under normal conditions, uric acid is entirely converted into carbonic acid and urea; and that oxalic acid may be formed when the process of oxidation is restricted, as is the case during sleep, and in pathological conditions.—*Pharmaceutical Journal*.

NEW METHOD OF REMOVING TUMOURS.

PROFESSOR SIMPSON has lately removed some tumours, fatty, cancerous, &c., by a novel operation in surgery. It consists of introducing in the morbid mass a slender hollow acupuncture-needle, and injecting through it a few drops of solution of sulphate or chloride of zinc, iron, creosote, &c. The fluid thus introduced into, around, or beneath the morbid tumour, destroys its vitality, and the tumour itself is subsequently thrown off by the process of spontaneous enucleation. The needle is thus substituted for the knife, and the operation is quite bloodless. Some ingredients, when thus applied directly to the internal structure of tumours, may destroy their specific without destroying their general vitality; and others lead more directly to absorption, by being brought in contact with the deposits that require to be absorbed.—*Edinburgh Medical Journal*.

PROGRESS OF THE CATTLE DISEASE.

ADVICES from Königsburg give unfavorable accounts regarding the cattle-disease, which, during the past two years, has manifested itself in Poland and other parts of Russia, and which now threatens to spread to Germany. For a short time during last autumn there seemed to be some abatement in the distemper, but it has again become very virulent. It seizes the animals suddenly, and after severe trembling and purging, they die within four-and-twenty hours. One proprietor lately lost 300 head in a single night. It attacks cattle exclusively, and does not communicate itself to sheep or any other kind of stock. Every effort is used to prevent infection, and detachments of the military are charged to destroy and bury all that become affected. On the Prussian frontier a strict quarantine is enforced; but it has already made its appearance in some villages, and the authorities have ordered that if even only one of a herd be attacked, the whole are to be slaughtered. The recent progress of the disease northward towards St. Petersburg, has been a chief cause lately in the advance of the tallow market.

POISONING OF COWS BY LEAD.

A FARMER, who keeps a dairy near Glasgow, lately lost eight cows in the following manner:—Having bought a large wooden tub from a dealer in second-hand articles of that kind, it was filled with water, and when delivered at the farmhouse appeared perfectly clean. Boiled food for the cows was, accordingly, put into it, and then distributed among eight of the cows; three of the eight very soon showed symptoms of sickness and distress, owing, as was supposed, to their having been the last supplied with the food which had been next to the bottom and sides of the tub; and, after suffering great agony, roaring and writhing in a manner most distressing to witness, they died in the course of the next day, and the day following a farrier was got to open and examine the dead cows, and he found manifest symptoms of poison having been the cause of death. The other five were affected less virulently, but were evidently becoming worse from day to day in spite of every remedy which was prescribed, and were therefore killed to save them from more protracted suffering. The farmer thus lost eight cows, which, he says,

averaged a value of 14% a piece, 112% in all. One of the staves of the tub, having been sent to a chymist, was found to have been impregnated with sugar of lead nearly throughout its whole thickness; so that, he remarked, it contained as much as would have killed 40 cows. The vendor of second-hand tubs said he had bought the one that had proved so fatal, at a chymical works. The farmer hesitates, we understand, to raise a claim for damages against one or both of the tub-vendors, because of its being a new case. If he is so advised, we cannot help saying we hold such an opinion to be a most irrational legal refinement. Surely, the first man who got a limb broken by a railway carriage was not denied compensation; nor should we fear to raise an action of damages if our head were to be broken by a cocoa-nut, though it might be the first instance in Britain of such a missile being used for such a purpose; to common sense it appears that the effect, and not the cause or means, is the question the law has to consider in a civil action—has injury been done, and what is its amount?—*Glasgow Mail*.

ANTIDOTE TO LEAD AS A POISON.

M. MELSSENS has found the iodide of potassium the most effective antidote to poisoning by lead compounds; the soluble iodide of lead being eliminated from the system by the kidneys.

Extracts from British and Foreign Journals.

LACTIC ACID THE NORMAL ACID OF THE STOMACH.

MOST of our readers will remember the experiments instituted by Dr. W. Beaumont, U.S. Army, on a young Canadian, Alexis St. Martin, who accidentally received the contents of a gun loaded with powder and duck-shot in his left side; which, after tearing away the integuments, muscles, portions of the fifth and sixth ribs, and of the left lung and diaphragm, perforated the stomach, the orifice being large enough to admit the forefinger. This orifice has never closed, although the surrounding wound cicatrized readily.

The man is still alive, in good health, and the father of a family, which he supports by hard labour. It appears that this is the only instance in which the opportunity has been afforded of watching the process of digestion in an otherwise healthy person. Lately, Dr. F. G. Smith, Professor of the Institutes of Medicine, in the Medical Department of Pennsylvania College, has performed some experiments on him, with a view to ascertain the nature of the gastric juice, and its influence on the various alimentary principles, namely, saccharine, oleaginous, and albuminous.

The analyses were made of the fluids obtained from the stomach while the process of digestion was going on, by Professor R. E. Rogers, of the same college, by whom the greatest care was exercised. In every instance the reaction was distinctly *acid* to litmus paper. The fluid obtained by irritating the stomach when empty was *neutral*. The temperature of the organ during digestion was 100° to 101° Fahr. When empty, 98° to 99° Fahr.

“The fluid for examination was obtained by placing the man upon his right side, and gently introducing a large sized gum elastic catheter, or a small glass speculum. He was then allowed to turn himself towards the opposite side, when the contents of the stomach would readily flow out. In no instance was food allowed to remain in the stomach longer than two hours. The mucous membrane of the empty stomach presented a pale pink colour, as described by Beaumont, with the surface lubricated by mucus; when digesting, its colour was deepened, and the peristaltic motion could be distinctly seen. During all the experiments, St. Martin maintained his usual good health, was in excellent spirits, and took his food with appetite.

“Previously to the opportunity afforded to Dr. Beaumont by St. Martin’s accident, specimens of gastric fluid were obtained by means of sponges attached to strings, as was done by Reaumur and Spallanzani; by exciting vomiting after eating, as recorded by Leipzig; by killing animals, while digestion was going on, as was done by Prout and others; or by establishing fistulous orifices in the stomachs of lower animals, as performed by Blondlot, Lassaigue, Bernard, and Barreswill, and others since them.

“All these observers, from the earliest to the latest, agree on one point, to wit, the existence of an acid reaction in the fluid of digestion; but as to the *nature* of that acid, they differ widely, some contending that it is *organic*, others that it is *mineral*; some that it is acetic, lactic, or butyric acid, others that the acidity depends upon the presence of hydrochloric

acid, or upon the acid biphosphate of lime. The latter theory, advanced by Blondlot, has been disproved by Dumas, Bernard and Melsens, who have shown, that not only the carbonate, but the basic phosphate of lime, are soluble in gastric juice, as are also zinc and iron, with the evolution of hydrogen gas,—properties which a solution of acid phosphate of lime does not possess.*

“The analysis of the fluid obtained from St. Martin by Dr. Beaumont in 1833-4, and submitted to Prof. Dunglison, then of the University of Virginia, showed, as the latter states, the presence of ‘free muriatic and acetic acids, phosphates and muriates, with bases of potassa, soda, magnesia, and lime, and an animal matter, soluble in cold water but insoluble in hot.’ Dr. Dunglison further states, ‘we distilled the gastric fluid, when the free acid passed over, the salts and animal matter remaining in the retort. The quantity of chloride of silver thrown down was astonishing.’†

“Previously to this analysis, in 1824, Dr. Prout had made the same assertion as to the presence of hydrochloric acid, based upon the examination of the contents of the stomachs of rabbits killed while digesting; and Braconnot, in 1835, subsequently to Dunglison, states that he obtained evidences of free hydrochloric acid in gastric juice obtained by sponging the stomachs of animals.‡

“More recently, Bernard and Barreswill, Pelous and Thompson, have been led to believe, from their own experimental researches, that *lactic* acid is the agent upon which the characteristic reaction of the gastric juice depends, and attribute the presence of hydrochloric acid in the free state to the decomposition of the alkaline chlorides by the lactic acid at a high heat. Hence, supposing *lactic* acid to be present in the fluid of digestion with the chloride of sodium, the fluid which passes over by distillation will, *at first*, be destitute of hydrochloric acid; but as the liquid becomes more concentrated, and the temperature rises, hydrochloric acid will pass over.§ Lehmann denies the power of hydrochloric acid to decompose the chloride of sodium, but asserts that chloride of calcium is decomposed by lactic acid, even *in vacuo*; and that hence it is not surprising that pure gastric juice should develop vapours *in vacuo*, which, when passed into a solution of nitrate of silver, should form chloride of silver.||

* ‘Phys. Chem.,’ by C. G. Lehman.

† ‘Experiments and Observations on the Gastric Juice,’ by Wm. Beaumont, M.D., Surgeon U. S. Army.

‡ ‘Annales de Chimie,’ t. 59, p. 348.

§ Carpenter’s ‘Human Physiology,’ Amer. Edit., p. 109.

|| ‘Phys. Chem.,’ vol. i, p. 93.

“Still more recently, Messrs. Bidder and Schmidt declare, as the result of eighteen corresponding analyses, ‘that pure gastric juice of carnivora, after eighteen to twenty hours’ fasting, contained *free hydrochloric acid only*, without a trace of lactic or any other organic acid; while the gastric juice of herbivora contains, with free hydrochloric acid, small quantities of lactic acid, which may, however, be referred to their more amylaceous food.’* Grunnewald’s experiments led him to the conclusion that the acid was an organic one; while Schroeder maintains that the fluid obtained by irritating the stomach by peas, owed its reaction to hydrochloric acid.†

“Amidst all this conflict of opinion, a reconciliation is scarcely to be hoped for; it is suggested, however, that a portion of it, at least, may be owing to the variety of animals experimented upon, and the question may be asked, whether observations made upon the human subject in the healthy condition, should not be relied upon, rather than those derived from experiments performed upon lower animals, in whom the severity of the operation, and the emotions necessarily excited thereby, must unavoidably vitiate the results. The difficulty is somewhat relieved by the fact that only *two* acids are involved in the question, and it narrows itself to the decision as to whether they are both present together, or whether one substitutes the other. The following experiments may serve to decide this question.

“May 6th, 1856, at 10 a.m.—Two ounces of dry wheat bread were given to St. Martin, which he masticated deliberately and swallowed. At 12½ p.m. the contents of the stomach were removed by Dr. Bunting, in the presence of a number of medical gentlemen and students, and carefully preserved for immediate analysis. The reaction was *decidedly* acid, sp. gr. 1009. Microscopic examination showed large epithelial cells, mucous corpuscles, amorphous granular matter, and starch granules, some broken down, others perfect, together with a few cells of cylinder epithelium.

“*Experiment 1.*—A portion of the fluid thus obtained was subjected to distillation. In the early vapour that came over, no trace of acidity could be detected by litmus paper; the distillate was neutral, neither acid nor alkaline, and did not precipitate with nitrate of silver. The distillation being carried further, so as to concentrate the material in the retort and increase its temperature, the distillate was found to become acid, and a portion being added to a solution of nitrate of silver,

* ‘Cyclopædia of Anat. and Phys.,’ part. xlvii, Art. Stomach and Intestines.

† ‘Dissert. Inaug.’

a faint precipitate, which was soluble in ammonia, took place. (This experiment has been repeated since, with the material discharged from the stomach, *at will*, after a meal of bread. The distillate became *distinctly* acid, but threw down the faintest precipitate, a mere opalescence, with nitrate of silver. The acid of the distillate gave all the evidence of lactic acid.)

“*Experiment 2.*—A portion of the material from the retort being tested with chloride of barium, gave no visible indication of sulphuric acid.

“*Experiment 3.*—Another portion of the gastric fluid was heated in a porcelain capsule for the purpose of incineration. The vapour that escaped gave no evidence of acidity, but the residue became increasingly acid in proportion as it became more concentrated.

“May 9th.—Two ounces of bread moistened with water were introduced into the stomach, through the fistulous orifice. In an hour and a half the contents were withdrawn. The fluid was very viscid, and presented, as before, a decidedly acid reaction. Some portions of the bread were undissolved, although the greater part had disappeared; sp. gr. not noted. The microscope revealed fewer epithelial cells than in the examination of the previous fluid, some mucous corpuscles and abundance of starch granules, some of which were broken down.

“*Experiment 4.*—A portion of the fluid just obtained was decanted from the bread particles, and carefully distilled, without presenting any evidence of acidity to litmus in the fumes. The distillate was acid to litmus, and when tested with nitrate of silver, presented a *very faint* indication of the presence of hydrochloric acid. The residue in the retort, when somewhat concentrated, gave a deep acid reaction.

“*Experiment 5.*—A portion of the same fluid, as in Experiment 4, was gently boiled in a retort; the distillate was acid, and when tested as before, gave the same faint evidence of the presence of hydrochloric acid. The residue, when taken from the retort and examined with litmus, was found more acid than before the distillation. It was then carefully evaporated and examined from time to time, with the effect of manifesting a constantly increasing acidity so long as it remained liquid. The heat was then carried still further, so as to dry but not char the material; on moistening it with water, it was found even more intensely acid. Heat was again applied and carried to *incipient* charring, and then the material was moistened and tested again, exhibiting a *diminished* acidity. The same experiment, repeated and carried to increased charring, showed, on moistening the residue, a still diminish-

ing acidity, and on heating the residue to thorough charring, and until all empyreumatic odour ceased to be given off, it was found that *all* acidity had disappeared.

“*Experiment 6.*—It was suggested that the acid reaction of the residuum might be due to phosphoric acid, and that it might have been decomposed by the heat employed and the carbon which was present. To determine this, another portion of the same fluid was mixed with three drops of a solution of phosphoric acid, and the mixture was carried through the same series of experiments, giving a successively increasing acidity, with this peculiar result, however—that even after the whole material had been thoroughly charred, as before, and still more highly heated, the acid reaction still remained, thus demonstrating that the acid detected in the product of digestion in the first experiments was *not* the phosphoric.

“*Experiment 7.*—To ascertain whether hydrochloric acid, if present in the free state, could resist the distilling heat, and remain in the residuum when concentrated, a minute drop was added to a quantity of water so large as to render its reaction undetectible by litmus; and a like quantity to the fluid of digestion, and both were distilled. In both cases, a *very* distinct evidence of the presence of the acid was obtained in the distillate by a decided precipitate with nitrate of silver.

“Experiments 6 and 7 go to show that the acid of the gastric juice, that at least upon which its most decided action depends, is not phosphoric acid, for it does not resist high heat, as that acid is known to do. It is probably not hydrochloric, nor acetic, for these are both highly volatile, and are detected readily in the distillate by nitrate of silver.

“*Experiment 8.*—This experiment was performed in verification of the doubt just stated, that hydrochloric acid is not present in the free state in the fluid of digestion. A portion of all the digestive fluids obtained from St. Martin, and a quantity vomited at will by another individual, were tested with pure deutoxide of manganese, without giving the slightest trace of the presence of chlorine.

“Another portion of the digestive fluids was carefully filtered, and a minute trace of chloride of calcium added to it; the material was then tested with oxalic acid, when immediately the white precipitate of oxalate of lime took place. Had any free hydrochloric acid been present, it would have prevented the appearance of the precipitate by dissolving it. To prove this, another portion of the same gastric fluid was filtered, and a minute quantity of hydrochloric acid and chloride of calcium were added to it. The addition of oxalic

acid now produced *no* precipitate. (See Lehmann's 'Phys. Chem.,' p. 93, vol. i.)

"It thus became a demonstration that the strong acid reaction of these gastric fluids was not due to the presence of free hydrochloric acid. It seems equally clear that it was an *organic* acid, from the fact that it was destroyed by heat, as in Experiment 5; and almost certain that it was lactic. To decide this doubt, a portion of the distillate, and another of the residue in the retort, were tested with zinc, as recommended by Lehmann ('Phys. Chem.,' p. 92, vol. i), with the effect of producing the characteristic crystals of *lactate of zinc*.

"It will be remembered that in Experiments 4 and 8 a faint evidence of the presence of hydrochloric in the distillate was manifested by the reaction with nitrate of silver. It will also be remembered, that Bernard and Barreswill assert that this hydrochloric acid is due to the decomposition of the alkaline chlorides at a high heat. To ascertain this, the following experiment was performed:

"*Experiment 9*.—Lactic acid was mixed with chloride of sodium, and the two were heated in a retort. The distillate gave the *faintest* possible trace of opalescence when treated with nitrate of silver. This evidence can scarcely be relied upon, for the solution above described requires so high a temperature to produce ebullition, that it was difficult to prevent a spurious distillation of the chloride of sodium along with the vapour, and from this, it is believed, arose the opalescence in the reaction between the distillate and nitrate of silver. If lactic acid can decompose the chloride of sodium, it can only be in very small amount; *chloride of calcium*, as Lehmann has shown, can be decomposed by lactic acid, and if this be present in gastric juice with lactic acid, we may have hydrochloric acid developed by distillation.

"May 8th.—A meal of roast beef, with a small portion of salt as a condiment, was given to St. Martin at 2 p.m. At 3½ o'clock of the same afternoon the contents of the stomach were removed. The fluid was viscid, inodorous, presented a flocculent deposit, and a marked acid reaction; sp. gr. 1008. The microscope revealed numerous epithelial cells from the mucous membrane of the mouth, downwards as far as the stomach, mucous corpuscles, amorphous granular matter, oil globules in great abundance, and transversely striated muscular fibres, in some of which the sarcolemma was softened and ruptured, and the sarcous elements just liberated.

"The gastric fluid was carried through the same series of experiments as those to which the product of bread digestion was subjected to, and with a like result. The distillate was

distinctly acid, but gave very faint traces of hydrochloric acid. The residuum became most intensely acid as it was concentrated, and the presence of lactic acid was manifested, both in the distillate and the residuum, by the test of the characteristic crystals of lactate of zinc.

“From the preceding experiments, the following conclusions are fairly deducible:

“1st. That the secretions of the stomach, when digested, are invariably acid.

“2d. That the acid reaction was not due to the presence of phosphoric acid.

“3d. That *if* hydrochloric acid was present, it was in very small quantities.

“4th. That the main agent in producing the characteristic reaction was *lactic acid*.

“It is but just to say that the experiments were conducted with the utmost care and precision, with a single eye to *truth*, and not with a view to support any favorite theory of digestion. So far from this it may be stated, that the results arrived at are at variance with the doctrines maintained by the writer for many years. Each experiment was repeated several times, so as to leave no room for doubt, and was carefully compared with the results obtained by examination of the fluids discharged at will by another individual.”—

Condensed from ‘The Chemist.’

THE MUSCULAR ELECTRIC CURRENT, AND THE RELATION BETWEEN IT AND THE UNKNOWN FORCE OF THE NERVOUS SYSTEM.

“PROOF of the existence of an electric current circulating through the muscle of a living animal, is obtained by introducing into a wound formed in the muscle of a living animal the nerve of a prepared frog, in such a manner that the extremity of the nerve shall touch the bottom of the wound, and another part the edge; the frog instantly contracts. The muscular electric current may be detected in animals for some time after death; but when it has once ceased, it cannot again be renewed. It is found in *warm* as well as in cold-blooded animals. By forming a *muscular pile*, Matteucci succeeded in giving considerable deflection to the needle of his galvanometer. The pile was thus formed: Five or six frogs were prepared and cut in half after Galvani’s plan, great care being taken not to injure the muscle. The thighs were then cut in half, and so disposed that each half-thigh should

touch the following, the faces of each turning the same way, and the interior of one coming into contact with the exterior of the next; so that one of the extremities of the pile was formed of the interior of the muscle, while the other extremity was formed of the surface. The deviation [of the galvanometer] amounted to 15, 20, 30, 40, 60 degrees, according to the number of half-thighs. . . . By experimenting on warm-blooded animals, such as pigeons, chickens, oxen, sheep, &c., ample evidence was obtained to prove, that whenever the interior of the muscle of a recently killed animal is, by the aid of a conducting substance, brought into contact with the surface, an electrical current is established, directed from the interior to the surface, the intensity of which varies with the animal, and is increased in proportion to the number of elements disposed in the pile. . . . Matteucci next instituted a series of experiments on living animals, the general results of which were the same as those on animals recently killed, the current in all cases moving from the interior of the muscle to its surface, or more generally from the interior of the muscle to any conducting substance in communication with that surface." He thus sums up the principal results of his experiments on the muscular current: "1. The intensity of the current varies for cold-blooded animals in proportion to the temperature of the medium in which they have lived for a certain time. 2. Its duration after death is so much the *less* as the animal is more elevated in the scale of creation. 3. The intensity varies with the degree of nutrition of the muscle, and it is always strongest in those muscles which are gorged with blood and inflamed. 4. It is altogether independent of the integrity and activity of the motor and sensorial nervous system. 5. The influence of narcotic poisons is null, or very feeble, on this current.

"Amongst the different gaseous poisons, *sulphuretted hydrogen* acts in a remarkable manner in weakening the intensity of the muscular current, the direction of which is in every case the same. More recently, M. Matteucci has added some further interesting and important information on the subject of the muscular current. He has obtained signs of tension at the two extremities of his muscular piles by the aid of the condenser. He has also obtained electro-chemical decomposition by the current; and by a great number of experiments he has established that the intensity of the current is in proportion to the activity of respiration, and that is proportionate to the rank of the animal in the scale of creation, whilst its duration after death varies in an opposite

ratio. He has further studied the influence of different gases, and has ascertained that the muscular pile acts equally in atmospheric air, in oxygen, in very rarified air, in carbonic acid, and in hydrogen."

Extensive experiments have been made as to the action of an electric current from a battery, when made to traverse muscles and nerves. One set of results is stated thus: "The current which traverses a motor nerve in a living or recently killed animal, and which continues to pass along this nerve for a certain time, so modifies its excitability as to render it insensible to its passage as long as it traverses in the same direction; but the excitability of the nerve recovers under the influence of the same current directed in a contrary way: when, then, a nerve has been thus modified by the passage of a current, we may restore to it the excitability it has lost by sending through it for a certain time a current, directed in a contrary way from that which destroyed its excitability. . . . It is an ascertained fact, that *repose* produces in a living animal, the nerves of which have lost their excitability by the action of an electrical current, the same effect as the passage of a current through the nerves in a contrary direction."

"*The relation between the electric current and the unknown force of the nervous system.*—Is there an electrical current in the nerves of a living animal? and can it be applied to the explanation of the functions of the nervous system? . . . Matteucci has sought unsuccessfully for an electrical current in the nerves of a living animal. . . . Indeed, from what is known of the properties and laws of propagation of electricity, it seems impossible to conceive the existence of an electrical current included in the nerves; in order to admit it, such a disposition in the structure of the nervous system as would suffice to form a closed circuit must be proved, but this anatomists have not yet done. . . . It is certain that the nervous force, whatever it may be, is not *electricity*. What relation, then, is there between these two forces? Matteucci's laborious electro-physiological inquiries lead him to the following conclusions: there exists between the electrical current and the unknown force of the nervous system an analogy, which, if it be not susceptible of the same degree of evidence, is, however, of the same kind as that existing between heat, light, and electricity. . . . The development of electricity by a crystal of tourmaline when heated, clearly proves the relation between heat and electricity: a similar relation between the nervous force and electricity is demonstrated by electric fishes. Electricity is not, however,

the nervous force, any more than *heat* is electricity : the one changes into the other in the one case, by the form of the integrant molecules of the crystal ; and in the other, by the structure of the electric organs. . . . The nervous fluid in this hypothesis is what we suppose heat, electricity, and light to be—namely, a peculiar vibratory motion of ether.”—*Chambers's Journal*, article on *Noad's 'Manual of Electricity.'*

ON THE ACTION OF THE VEGETABLE ACIDS ON CALOMEL.

By M. BAUWENS.

THE most enlightened physicians, the greatest chemists, and most prudent pharmacutists, on the faith of tradition, always advise patients not to take any acid substances when calomel has been administered to them. M. Bauwens has made some investigations on this subject, and has obtained the following results.

At the ordinary temperature, at 86°, and even 104° F., (30° and 40° C.) calomel, in prolonged contact with a concentrated solution of tartaric or citric acid, gave no trace of corrosive sublimate.

Calomel, which is insoluble in water, alcohol, and ether, does not instantly communicate to the tongue the styptic flavour of the soluble preparations of mercury ; but this taste is perceived when the alkaline haloïd salts of the saliva come in contact with it, in consequence of the property possessed by alkaline salts of dissolving the mineral haloïd salts to form double salts with them.

Calomel appears to owe its anthelmintic and purgative properties to the haloïd salts which it finds in the economy. If large doses of calomel act relatively less powerfully than small ones, it is because in the first case the mercurial salt does not find in the economy a sufficiency of alkaline salt to convert it all into soluble salt, whereas, in the second case there are sufficient alkaline salts in the intestinal canal to dissolve the mercurial salt completely. Consequently children who seldom take much chloride of sodium, can take more calomel in proportion than grown people. The physicians of sea-side towns, where the water is generally brackish, seldom prescribe calomel, and the doctors of the fleet have been obliged to abstain from giving it to sailors who eat salt meat.

Hydrochloric acid has not the property of uniting immediately with calomel, or to cause it to pass from the state of

proto- to that of deuto-chloride, because the affinity of chlorine for hydrogen (reduction of the chloride of silver by means of nascent hydrogen) exceeds its affinity for mercury. Still its employment should not be advised with calomel, because combining with the alkaline substances in the body, it passes to the state of chloride, whose action we have already described.

The extreme ease with which the mercurial chloride is converted into a soluble salt under the influence of so many chemical agents, renders great prudence necessary on the part of the physician.

Corrosive sublimate dissolved in syrup, does not deposit calomel for twenty-four hours. This saccharolate had not lost its clearness after four days, nor deposited the least precipitate, after having been exposed to a temperature varying from 86° to 140° F. (30° to 60° C.) After boiling for some time, the syrup becomes turbid and deposits protochloride. The saccharine solution, already more or less decomposed by the partial carbonization of the sugar, yielded a further quantity of deutochloride to sulphuric ether, which proves that the sugar which is generally added to calomel is rather employed to give a pleasant flavour to the medicament, than to convert into protochloride the traces of deutochloride which the calomel might possibly contain, as is the general opinion.

Animal albumen, which is generally recommended to neutralize the effect of deutochloride of mercury, does not possess this quality to the extent that might be desired. M. Orfila, who first recommended albuminous water in poisoning by corrosive sublimate, advises giving enough to decompose the whole, but not to give too much, so that an excess might not redissolve the sparingly soluble compound, which this mercurial chloride forms with the albumen, and thus restore to it a portion of its poisonous qualities.

In poisoning by the soluble salts of mercury, we think that the preference as an antidote should be given to substances which the digestive functions will not alter, such as hydrated protosulphuret of iron, advised by M. Mialhe, tannate of potassa, and iron filings themselves.—*Annales de la Société de Médecine de Gand*, May, 1856.

STABLE MANAGEMENT.

HACKS AND HUNTERS.

“ALL very fine!” we think we hear the farmer exclaim. “Hunters, forsooth! there was a time when we could keep one or two of the right sort with a clear conscience, but now we have enough to do to get our cake and ale.” Well, my good friend, don’t grumble, there are people in this world who cannot do that; and moreover, you can keep a horse that, if not what you call one of the right sort, will still carry you well to market, and give you a day with the hounds now and then, and some of you do manage one or two of the right sort even now; therefore you will forgive our boring you with a few “wise saws” on this subject; we know it is not strictly an agricultural matter, albeit one that most agricultural men can grow warm upon.

In our former sketch we suggested a few rules that we thought would be useful relating to the construction of the stable for the agricultural horse, and beyond the extra neatness in the several arrangements, we don’t think anything is to be added for the hack or hunter’s habitation; the animals themselves, however, are very differently situated, their work is less regular generally, they have more time in their stable, and the duties required are frequently arduous if not continuous.

First, for the hack; let us look at him in his stall. There he stands, tied up by his head to the manger rings, his body well clothed, and his legs half buried in litter, clean and neatly arranged at the edges; the stable is rather warm, but the groom knows the animal’s skin will look all the better for that; he fondly imagines that the horse is very comfortable, very carefully tended; and so he is, indeed nearly killed with kindness; but there is something about him not quite contented; he is shifting one leg and then another, now looking round, now having a nibble at his manger, and looking altogether as if he would uncommonly like something to do. We should wish to take that careful groom, hold him by the button, and having bribed him to listen to us without interruption for ten minutes, go on in this wise: “Now, my good fellow, first untie that horse’s head, in fact, let him loose, make his stall into a box; take off one of those cloths; open those ventilators that you have so considerably plugged up; throw all that litter under his manger, and let him stand on the cool floor till the time comes for him to rest; straw is

meant to be lain upon, not to keep the legs and feet in a perpetual stew!" Conceive the state of mind of the man who prides himself on the appearance of his horses and his stalls when spoken to in this strain; the idea of his stables being so maltreated, his horses standing on bare bricks. What would any gentleman think who came to see the stud? Ah, we forgot that! In our innocence, we were thinking only of the horse's comfort; we were for ensuring cool stables, freedom of movement, limbs emancipated from the binding litter, with a cool surface for his feet; never dreaming what any one might say about the appearance! However, we can't alter our opinions to suit the fashion of the times; therefore, what we have written is written.

We will now have the same animal outside the stable door; he is about to undertake a journey, ridden or driven as may be; we need not follow him, but wait patiently until his return home, warm and somewhat tired. He is taken into his box, his saddle or harness removed; again he is brought outside, fastened to a ring near the stable-door, his feet and legs washed, again returned to the stable, dressed over, clothed, and littered down for the night. Now, this standing outside in the cool air after exertion cannot but be provocative of cold, and sometimes of serious internal inflammation; indeed, the very intention of it, to prevent the animal's perspiring in the stable after being clothed, is in itself a sufficient condemnation of the process, the melancholy effects of suppressed perspiration being familiar to all who think on the matter; the difficulty is easily removed by walking the horse gently for five or ten minutes before taking him into the stable, for when once there he is certainly the better for not being disturbed. On the treatment of the animal before we leave him for the night, we may be allowed to suggest the propriety of washing and well drying the feet and legs, clothing the latter with flannel bandages, and well rubbing the body with a wisp of hay. And here, in passing, permit us to remark, for the especial benefit of the dresser, that there is no occasion to use the said wisp after the manner of a mallet, the prevailing notion in the minds of those men being, that dressing a horse's skin, and beating his ribs in, are in some mysterious manner intimately connected.

Of course, we have been speaking of the treatment necessary after a journey of some length, that has produced a certain amount of exhaustion; the mere pleasure ride or drive of an hour or two calls for no more after-care than the ordinary morning's exercise.—*Oxford Journal*.

(*To be continued.*)

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

An Essay on the Therapeutical Effect of Purgatives on the Horse.

By J. FIELD, M.R.C.V.S. London: Longman, Brown, Green, Longmans, and Roberts, pp. 50.

HAVING already sat in judgment on the above thesis, it being the successful competing essay for the Prize Medal awarded by the Veterinary Medical Association, it may be expected that we should speak favorably of it. We confess that we had not anticipated seeing it in print; but now that we have, and another opportunity has been thus afforded us of again perusing it, we can only say it has more than confirmed us in the correctness of the decision of the Council respecting its merits. It redounds much to the credit of the author, and lights up in our mental vision a bright prospect of his future. Entering thus early upon the literature of his profession is a proof, the best that can possibly be adduced, of the earnestness he feels for its onward progress, and we wish that many others would do as he has done, for we feel convinced that much talent lies latent, the rendering sensible of which would be followed by benefit to the profession, and raise it both in estimation and worth.

The essay is introduced by a concise and pleasing history of medicine. This we have been strongly tempted to extract, but the crowded state of our pages precludes its insertion for the present; hereafter we may give it, in another section, to our readers. The subject of the thesis is then entered upon by the author's remarking that, "in administering medicines, various circumstances must be taken into consideration." Among these, he enumerates the conditional state of the agent, or state of aggregation, the results of chemical combination and organic peculiarities. Then, speaking of the quantities—these, he says, are to be determined by age, size,

race, sex, and temperament; nor should mode of life be overlooked by the veterinary practitioner. The consequences attendant on a long-continued use of certain substances are next dwelt upon, followed by the different action produced by the same agent in health and disease. To this succeed the ways in which medicines enter the system, and the manner in which purgatives operate, with their divisions.

“Cathartics may be defined as medicines which quicken or increase alvine evacuations; they produce their effect in various ways. Some act by merely exciting the muscular fibres of the intestines to increased peristaltic motion, and thus cause their contents to be more quickly and more completely evacuated; some stimulate the mucous follicles and exhalents, so that a larger quantity of fluid than usual is excreted from the inner coat of the intestines, and thus the fecal evacuations are rendered more liquid and more copious. In many, both of these properties are united, and some extend their stimulus to the neighbouring viscera also, and hence produce an increased discharge of the supplementary intestinal secretions, as the bile and pancreatic juice. Cathartics differ also as to the part of the intestinal canal on which they act; the effect of some being confined to the small, and others to the large intestines, while many of them appear to stimulate the entire tube; they differ, moreover, as to the degree in which they produce their effects, and hence have been divided into three classes:

“1. *Laxatives*, which operate so mildly as merely to produce the evacuation of the intestinal contents, without producing increased secretion or stimulating any of the neighbouring viscera.

“2. *Purgatives*, commonly so called, which besides remarkably increasing the peristaltic action of the intestines, occasion increased excretion of the fluids from the exhalent vessels from the neighbouring viscera.

“3. *Drastic* cathartics, which operate in the same manner as purgatives, but with much greater energy.

“In order to understand the manner in which cathartics act, it is necessary to have a knowledge of the formation, arrangement, and functions of the alimentary canal (which includes the stomach and the small and large intestines), and of the neighbouring viscera, which are implicated in the function of digestion, namely, the liver and pancreas.”

Our author now enters upon the anatomy and physiology of the various organs implicated; after which, the natural and chemical history of the various agents resorted to by the practitioner of veterinary medicine is given, namely, aloes in its several kinds, oils of linseed, olive, castor, and croton, calomel, sulphur, and the sulphates of magnesia and soda, with the adjuvants—clysters and mashes.

Now, although there may not be much that is absolutely new in this, yet there is a freshness in the description, and an agreeable interspersing with facts, an acquaintance with

which cannot fail to profit, and that more especially the student. Some of our readers may, perhaps, remember that, at one of the *Conversazioni* given by his father to the members of the profession, Mr. J. Field placed on the tables a very neat collection of these drugs. These have constituted the texts of his theme.

The essay closes with the following extract, which we give entire :

“The symptoms, independent of the existence of specific disease, and exclusive of a confined state of the bowels, which indicate the necessity for the administration of cathartics, are a fulness of the belly, without tenderness or pressure, the urine of a high colour, owing to its being loaded with bile or fluid dejections.

“The first general intention in administering purgatives is to clear the intestinal canal, for which purpose they must be given in full doses, and those selected which will act on the whole course of the canal. The second is to correct unhealthy secretions. The third is to augment the discharge from the intestinal exhalents, so as to diminish the bulk of the circulating mass, and to lower excitement. The fourth is to lessen the determination of blood to particular parts by employing a purgative to produce the effect of a counter-irritant.

“Cathartics are employed advantageously in many fevers; thus, when fevers depend on morbid matters, it is necessary they should be expelled, and this is often effected by purgatives: cathartics are supposed to have the power of cutting short the attack, and certainly when there are vitiated biliary or intestinal secretions, their expulsion must be of great benefit; and in most fevers there is generally found great constipation of the bowels. Dr. Hamilton, in his work on ‘Purgatives,’ regards their utility to depend on their acting upon the whole extent of the intestinal canal, and their carrying off feculent matter rendered offensive and irritating by constipation. In thoracic inflammation, cathartics should be carefully avoided, though it is necessary that the bowels should be kept in such a condition that their regular action is not interfered with. In enteritis, purging is sometimes necessary; and instead of increasing the inflammatory action which constitutes the disease, it diminishes it by removing the hardened feces or other causes of inflammation, by increasing the exhalation of fluids into the intestines, unloads the vessels, and relieves the diseased parts by the same process which Nature adopts. In strangulated hernia, again, after the reduction of the gut, the danger of the case is considerably lessened by unloading the gut; but at the same time much caution must be used in the agent which we employ, so that too much inflammation may not be set up. Again, in diseases of the other abdominal viscera, as the liver, the action of cathartics is most salutary; but, when the liver is attacked with inflammation, they must not be used, as purgatives add fuel to the fire; they augment the excitement and produce much mischief. The close connection between the skin and the intestinal canal, leads us readily to suggest the great benefit to be derived from purgatives in cutaneous diseases. Cathartics are generally administered in dysentery when the intestinal inflammation is not attended with much diarrhoea; the contents of the bowels acquire an acrid character, to be removed; but in these cases care must be used in the

choice of agents, as drastic purgatives augment the symptoms. Oleaginous purgatives are those which are pointed to in affections of this nature. In diseases of the brain, cathartics of the most active nature are often requisite, and it is in these cases that the croton oil is particularly useful; for deglutition is often greatly impeded, and by pouring a few drops of this agent on the tongue all the desired effects are produced.*

"The torpid state of the bowels in these cases often admits of the accumulation of great quantities of fæces in the cells of the colon, and we are required to resort to the most powerful purgatives to remove them; at the same time their action may be assisted by enemata. In all spasmodic affections of the intestinal canal, mild cathartics, and particularly the oleaginous ones, are highly beneficial.

"Again, it is highly probable that tetanus arises from some morbid irritation, which, if it cannot be traced to a wound, must be looked for elsewhere—and where more likely than the intestines? This is borne out by the frequent occurrence of this variety of the disease in those animals which live on crude and indigestible kinds of food.

"In Sir George Mackenzie's 'Travels in Iceland,' we are informed that in a group of islands, situated on the west coast, many of the children are cut off by lockjaw. These islands are formed of lava; the inhabitants are remarkably indolent; their food consists chiefly of salted pulmas and puffins (very fat, oily sea-birds); they have no vegetable food. The disease therefore appears to arise from innutritious diet. In some forms of dropsical effusion, cathartics have been long relied on, but in taking this opinion, it must be remembered that dropsy is often the result of a weakened and debilitated state of the system. In such a case cathartics are inadmissible. Anasarca and ascites are forms in which they are inadmissible, and in hydrothorax their use is by all means to be avoided, for by increasing the debility, they augment the difficulty of breathing, not only by allowing the fluid to accumulate and narrow the capacity of the chest, but by generally weakening the body.

"When cathartics are admissible in hydropic complaints, they should be administered on successive days; but if their curative effects be not obvious in a short time, they should be discontinued, as they will tend to debilitate the general system. During this, tonics and moderate stimulants are employed to give strength.

"Every kind of cathartic has been employed for the expulsion of worms from the intestinal canal. They are well adapted for removing these parasites when they are destroyed or removed from the coats of the bowels by other means; but their continued use is more likely to foster worms than to destroy them, by weakening the intestines and increasing the quantity of morbid mucus, the nidus in which they are formed.

"In almost all chronic diseases cathartics are useful, and, as is well known, also in regulating the nocturnal and diurnal discharges from the intestines, so requisite for preserving ordinary health.† The daily evacuation

* In maniacal cases in the human subject, the ancients rested their chief reliance on cathartics, and the agent they employed was black hellebore, a medicine scarcely used now, except occasionally by veterinary surgeons as an external application, from its powerful stimulating character. It is particularly recommended by Mr. Stanley, *late* of Banbury (*vide* Morton's 'Veterinary Pharmacy.')

† The most remarkable case of abstinence in the human subject that I know of is that of a young lady mentioned by Ponteau, who had no stool for upwards of eight years; yet during the last year she ate abundantly of fruit, and drank broth, with yolks of eggs, coffee, milk, and tea.

of the bowels is necessary to a state of health. When this is interrupted, symptoms of derangement of the digestive organs and abdominal viscera occur, and when long continued, are followed by emaciation. To such, mild purgatives are beneficial. When costiveness is combined with griping from spasmodic constriction, the disease is colic. In this disease cathartics, combined with opiates, are the remedies to be applied. In intussusception, injections have been recommended, but we believe no human aid will avail, in such a case, to save the patient; gangrene supervenes, and death ensues.

"And now I close my observations on purgatives by these few lines from Pope's 'Essay on Man:'

'Thus then to Man the voice of Nature spake:
 "Go, from the creatures thy instruction take;
 Learn from the birds what food the thickets yield;
 Learn from the beasts the physic of the field:
 Thy art of building from the bee receive;
 Learn from the mole to plough, the worm to weave;
 Learn from the little nautilus to sail,
 Spread the thin oar and catch the driving gale.'"

DERIVATION OF THE WORD INTOXICATION.

THE term *intoxication*, applied to a vice, unfortunately the bane of too many countries, we are told, is derived, by Johnson and Webster, from "in" and "toxicum," which latter Pliny says is from "taxus," a species of tree. The yew—*taxus baccata*—has been conjectured by Dr. Pickells as furnishing the "toxicum" of the ancients, a most active poison; so much so, that Ovid alludes to the "barbarians" using it for poisoning their arrows.

Should not the very name deter from the improper use of fluids capable of producing such effects?

THE BRAIN IN SPIRITS.

HYTRI, the anatomist, used to say that he could distinguish, in the darkest room, by one stroke of the scalpel, the brain of the inebriate from that of the person who had lived soberly. Now and then he would congratulate his class upon the possession of a drunkard's brain, admirably fitted from its hardness and more complete preservation for the purposes of demonstration. When the anatomist wishes to preserve a human brain for any length of time, he effects his purpose by keeping that object in a vessel of alcohol. From a soft pulpy substance, it then becomes comparatively hard. But the inebriate, anticipating the anatomist, begins the indurating process before death.

THE VETERINARIAN, MARCH 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

OUR LITERATURE.

THE enterprising traveller and missionary, Dr. Livingston, has told us that in some of the valleys of the interior of Africa, whence he has recently returned, there exists a complete network of perennial streams, which generally run from the sides into the centre of the country, rendering it exceedingly fertile and healthy ; and that, after coalescing, they form one magnificent river, the Leambye, which falls into the Mozambique Channel.

A group of zoophytes have located themselves in the cleft of a rock below the waters of the South Pacific Ocean, and they are busily at work forming for themselves coral cells as habitations. The colony increases until myriads upon myriads of these little animals are all engaged in the same occupation. At length their united labours have raised the formation above the surface of the waves, which, dashing over it in crested foam, induces them to proceed with their work on either side, and all around, thus extending their operations and increasing their dominions.

Ere long, the mighty mass becomes uplifted by some internal convulsion, or the waters do not rise so high as they were wont to do, and the polyps being thus removed from the influence of the sea-water, soon die. And now another change is observed to commence. First on the coral reef is noticed a tiny moss, its sporule borne there by the passing winds. It gathered its spare nutriment from the decaying polyps, and thus converted putrescence into life and beauty. In its turn it also dies, and, dying, generates an acid, which by decomposing the coral sets free other ingredients, and these, mingling with the film of vegetable mould, increase both the quantity and the fertility of the newly formed soil.

This process goes on, it may be, for ages, until at length an island is formed. Soon it becomes clothed with luxuriant vegetation ; Nature spreads her carpet over it ; stately trees

grow there, and birds, that may have been the conveyers of their seeds, sing blithely in the branches thereof. At last man comes. He boldly takes possession of that which he has had no hand in producing; claims it as his own; breathes its air, tills its soil, peoples it with domestic animals, and navigates the surrounding seas.

Who cannot see in all this the advantages that are to be derived from subdivision so as to accomplish an object; and how much may be effected by co-operation? Therefore, no one should consider his efforts, however humble they may appear to him to be, as altogether valueless, since the many can, and often do, achieve that which the few fail to perform. One rivulet could not have removed the barrenness of the desert, nor one polyp have formed an island; nevertheless, many acting together did both. And who is not desirous of contributing, if it be only a small stream, to the ocean of Truth? Or who would not add an increment, however minute, to the expanse by investigation? Science, it has been observed, is a commonwealth. Each member, therefore, has an interest in its welfare, and can add something, if he will, to increase its boundaries. Moreover, it is his duty to do so. It is likewise diffusive; nay, more, it provokes to laudable emulation. As masses of matter, lying near to each other in a line, are all of them moved, if so be force is applied to one end of the series; so, impetus being once given to a community, by which its inertia is disturbed, it goes on, on, on, until it develops that which had otherwise remained for ever hidden; but being aroused from its dormant state, it, in its turn operates as an incentive to others, causing each to act as feeling his individual responsibility. Or, to take another figure, this mental development may be compared to catalytic action—a body in the act of undergoing a particular change, which induces the same change in another lying beside or in contact with it, by effecting a disturbance in the molecular equilibrium,—thus giving rise to the production of the like substance; a species of intellectual ferment or contagion.

The above similes arose in our minds while perusing an 'Essay on Purgative Agents,' by Mr. J. Field; a review of which is inserted in our present number. As yet, he is but a

young member of the profession, but he has given an earnest of what may be expected from him, if so be he slacken not nor falter in his course. We hail him as a worker together with us—another added to the list of veterinary authors. We are not ignorant of the labours of the pen, nor of the little profit attached thereto when they are connected with Science; nevertheless, they bring their reward, and it is one far higher than mere pecuniary gain. May many more be stimulated by the example thus shown. We are convinced that there is talent enough among us, but it requires to be drawn forth. We hold that the literature of a profession affords a true criterion whereby to judge of its state, whether it be healthy or otherwise. It must be confessed that there is a paucity of standard works with us. We have not, in this respect, imitated our professional brethren on the Continent, and if we were permitted to speak our minds boldly, we should not hesitate to say that the heads of our profession in England have failed here to do their duty: they have forgotten Lord Nelson's pass-word.

We sincerely rejoice in the appearance of these *brochures*, and earnestly hope they will be multiplied a hundred-fold. They are the rivulets which irrigate the soil, and by-and-by they will be united so as to form a mighty river, which, in its passage onwards, will communicate life and fertility, and from which rich supplies may be withdrawn to meet emergencies. Or they are the multiplied zoophytes, which by their united labours will have formed a field for still further inquiry and investigation.

We would, also, that every encouragement should be given to the rising members of our profession. "The boy is oft father to the man." We must soon "shuffle off our mortal coil," and others will have to take our places. May they fill them far more profitably, both to themselves and others, than we have done. May they likewise be animated by a more ardent zeal; for should this be wanting on their parts, then must our profession retrogress, and for us, as a body, it will be a sad day, indeed, "a day of darkness and of gloom; a day of clouds and of thick darkness, as the morning spread

upon the mountains," which will never break. Then shall we go back to a worse period than that of the old days of farriery, never again to be placed in the position we now stand, since Science, through us, will have received her death-wound, and been proved of nothing worth to our Art. Oh! let this not be! Nor need it, since the facilities for the acquirement of knowledge are both many and great in this our day, and the aspirant has only to make a proper use of these means, effectually and for ever, to prevent its occurring. Possibly the facilities are greater now than ever before existed; these consisting principally in books which are daily issuing from the press; in scientific and other lectures delivered in almost every town, and in associations for intellectual improvement. These all furnish *materiel* for thought, which, being matured by reflection, will, if the mind be rightly constituted, manifest itself in contributing to the well-being, more especially, of that section of society where Providence has cast our lot; whilst by extension the general good will be promoted. Let us be up, then, and doing, for truly it may be said that, 'Many are running to and fro, and knowledge is increasing.'

ARMY APPOINTMENTS.

WAR DEPARTMENT; *Feb. 17th, 1857.*

2d DRAGOON GUARDS.—Veterinary Surgeon T. P. Gudin, from the 2d Dragoon Guards, to be Veterinary Surgeon, *vice* Opie Smith, 2d Dragoons, who exchanges.

ROYAL ARTILLERY.—Veterinary Surgeon James Brennan has been permitted to resign his commission.

Feb. 20th, 1857.

MILITARY TRAIN.—To be Veterinary Surgeons: Veterinary Surgeons W. Gloag, from the 11th Hussars; W. Death, from the Land Transport Corps; W. Varley, from the Land Transport Corps; J. J. Channon, from the Land Transport Corps; T. Paton, from the Land Transport Corps; J. Brown, from the Land Transport Corps; G. Fleming, from the Land Transport Corps.

Feb. 24th, 1857.

STAFF.—Veterinary Surgeon George Western has been permitted to resign his command.

THE
VETERINARIAN.

VOL. XXX,
No. 352.

APRIL, 1857.

Fourth Series,
No. 28.

Communications and Cases.

SOFTENING AND RUPTURE OF THE LEFT
KIDNEY, ASSOCIATED WITH CALCAREOUS
DEPOSIT IN THE PELVIS AND URETER OF
THE RIGHT.

By CHARLES DICKENS, M.R.C.V.S., Kimbolton.

MY patient, an aged, entire horse of the Suffolk breed, called "Boxer," which, about ten years since, the late Duke of Manchester gave Mr. Catlin, of Butley Abbey, Suffolk, the large sum of 300 *guineas* for, was the sire of that gentleman's celebrated horse "Duke," which obtained the Royal Agricultural Society's prize, as also many others, and was considered by competent judges to be the best horse of his class in the kingdom. Besides working on the farm, Boxer was annually used for covering, and a very healthy animal he always appeared to be until about the middle of January last, when it was reported to me that he was unable to stand; and on an examination, I found that this incapacity was chiefly caused by want of power in his posterior extremities. The general surface of his body was warm, but the visible membranes were pale. The pulse varied from 40 to 50, and was likewise tremulous. A slight amount of œdema could be felt about the loins and haunches, and more particularly so on the left side. These symptoms, however, were looked upon as denoting rather a general break up of the constitution than anything else.

With some little difficulty he was got upon his legs, after which he was enabled to keep up for a few hours; but it was thought prudent to place him in slings, and he managed to walk to them a distance of a few yards. As his appetite was good he

was ordered generous diet, and no medical treatment was pursued beyond the use of a stimulating embrocation, and the subsequent application of fresh sheepskins in succession to his back and loins. After the lapse of a few days, we fancied that the general symptoms indicated a slight amendment, and we were in hopes that Boxer would soon "be himself again;" which was much to be desired, as he was a special favorite with all, from his noble owner downwards to the least boy on the estate, and with whom, from his docility, he could safely be trusted; but on the morning of the 4th of February, he was found dead in his slings; an event which seemed to have happened without a struggle.

Post-mortem examination.—The pericardium contained about a pint of fluid; the heart was pale, and its walls were very thin. The lungs were healthy, excepting a slight emphysema of the left. The stomach contained a considerable quantity of soft food; its internal surface was very healthy, but its muscular coat towards the pylorus was so thin as to be very easily torn. The intestinal tube was normal throughout. The situation of the left kidney was covered with a mass of clotted blood, at least a gallon, and the structure of the organ was found to be so much softened, as scarcely to be recognised, while all traces of its membranous covering were gone. It was quite free from calcareous deposit, and had evidently burst from over-distension. The right kidney, when *in situ*, looked very healthy; but, on removing it, its pelvic portion was found to be literally crammed to repletion with calculi, similar to those I forward for your inspection. They weighed at the least 8 oz., and the *ureter* also was completely plugged with them. The walls of this canal were so much dilated, as for it to readily admit, when emptied of its contents, of the passage of two fingers. The bladder, especially for so large an animal, was remarkably small. Its structure had undergone no change.

[*Description of the Calcareous Deposit.*

The calcareous matter, kindly forwarded to us by Mr. Dickens, exists in fragments, very irregular in shape, and varying in size from that of a pin's head to a walnut. The colour is dark brown; smell urinous; by calcination about one half its weight is lost, the residuum dissolves entirely in dilute hydrochloric acid with considerable effervescence. The solution rendered neutral gave an abundant precipitate with oxalate of ammonia. There was no indication of the existence of the phosphates.

The inference is, that the deposit consists of carbonate of lime and animal matter.]

THE EASTERN CAMPAIGN. A CHAPTER OF ODDS AND ENDS.

By THOMAS WALTON MAYER, M.R.C.V.S., Royal Engineer
Field Equipment.

IT was at the close of a hot and sultry day in June, 1855, that I found myself moving away from the great metropolis, as fast as in these days of rapid locomotion steam could take me, *en route* to Marseilles and thence to Constantinople, to take my share with others in the great events which were going on in the East. In a few short hours I was safely located in the capital of France, where I purposed to remain three or four days. It is not my intention to entertain your readers with a description of Paris, but, in the course of my short sojourn there, I found time to pay a visit to the Veterinary School at Alfort, which I consider as deserving of a remark or two. The contemplation of buildings, erected and maintained by Government for the prosecution of veterinary science and the advancement of our art, could not fail to excite in my mind a feeling of regret that in England, where the value of horses and cattle exceeds that of any other country in the world, no such noble establishment exists. That it should have been left to the patriotic feelings of a few individuals on the one hand, and to private enterprise on the other, to effect that which in other countries is considered the duty of the nation at large, is to some extent to be regretted. Hence our Veterinary Colleges of London and Edinburgh cannot be placed on a level with that of Alfort, or most other Continental schools, for style of building or for conveniences for teaching. At Alfort you are struck with the completeness of the design, as well as with the order and regularity with which everything has been carried out for the comfort and convenience of all: from the professors downwards, even to the stable-boys, each has been thought of and cared for. Nothing has apparently been left undone that can ensure the comfort of the pupils, and especially in so far as their board and lodging are concerned. Proper regulations are likewise made for their study, recreation, and moral discipline. Thus order may be said to reign through the whole college.

At the time I visited the institution, the students' dinner-hour had nearly arrived, and when I entered the dining-hall I was much struck with the appearance it presented, and

could not help reverting in my mind to the state of things at our own schools, by which young men are thrown on the temptations of the metropolis, to seek out their lodgings, to provide their own meals, to choose their own recreation; and all these without any hand to guide them, or without any voice to warn or advise them.

The buildings at St. Pancras will always impress me for the future with the idea that the governors, having erected the stables, with a house for the groom on one side and the farrier on the other, repented of what they had done, and determined not to finish that which they had undertaken. The time, however, may not be far distant when such a state of things may cease, and when the necessary adjuncts are made to the existing institution. When I first entered the Veterinary College of London as a pupil, I was much surprised to find that nearly every horse in the infirmary was lame, and that in most cases a frog-seton was employed as a means of cure. In going through the school at Alfort I was equally surprised at the great number of cases of lamenesses, arising from treads and quittor. The latter-named disease is now very rarely seen amongst our horses, thanks to the attention which is bestowed on the animals' feet and to our improved method of shoeing.

Alfort possesses a *very valuable museum*, of which, in comparison with our own, the less I say the better. The only drawback to my visit to this really national establishment was the absence of its professors, who had, I believe, gone to Paris to visit the Exhibition just then open. The next day I left Paris, and on arriving at Marseilles proceeded at once on board the mail steamer, and after a very pleasant voyage of eight days, calling at Messina, Athens, Gallipoli, &c., we landed at Constantinople.

It would be foreign to my subject to give your readers a description of Constantinople—a fairer city from on board the steamer I never beheld, or one placed in a more enchanting position; but when, in company with the late lamented and gallant Colonel Unett, of the 19th Foot, I rode up the main street of Pera, I thought I had never beheld so gross a deception, or ever witnessed so much dirt, or smelt so many stinks. The next day I proceeded to the camp of the Turkish Contingent, at Buyukdere, on the Bosphorus, about fourteen miles from Constantinople, and was at once ordered to do duty with the Land Transport Corps, then in course of formation. With this corps, in addition to my other duties, I continued until its dissolution in June last.

A few days after my arrival I was named one of a committee of three, for the purchase of horses, mules, and bullocks; and in the course of two months we had purchased about 1000 horses, 2000 mules, and 500 bullocks, at prices averaging about £15 a piece for the horses, £17 10s. for the mules, and £10 for the bullocks.

The Turkish horse is a strong, hardy animal, possessing great endurance, and capable of carrying heavy weights. The average height of these horses is thirteen hands three inches. They are also, generally speaking, healthy. After an examination of a very large number of them, I found that spavin was more common than any other disease, next ophthalmia, and lastly broken wind.

The horse-dealers of Constantinople are extremely well acquainted with the tricks of their profession; they are perfect adepts in performing those delicate operations on the teeth which we call "bishoping." They are also quite up to the mark in bringing out a broken-winded horse in serviceable condition, and in making a vicious animal for a time as gentle as a lamb.

The mules of Asiatic Turkey are small, but very hardy. They will carry as much on their backs as the larger mules, and are far better adapted for a mountainous country. They were found to stand the climate of the Crimea well.

The bullocks are very useful for the purposes of Arabas. They were not very large, but strong.

One of my first objects was to set apart a piece of ground to picket my sick and lame horses, as there was no building for such a purpose. I fixed upon a spot shaded by seven trees, which were rendered remarkable as being Geoffry de Bouillon's trees, under the shade of which he is said to have held his council of war in the time of the Crusades. Two of these trees were completely hollow; one was thirty-seven feet in girth, and the other forty-seven feet ten inches, and both of these were large enough to admit horses or mules. I made use of these hollows as loose boxes, and very much to the annoyance of the Turks, who had quietly left their tents and taken possession of them as their dwelling-place.

Among my first patients was a very neat, bay pony, about thirteen hands two inches high, which had been missing on the mountains several days, and was brought in affected with lock-jaw. On examination no wound or injury could be discovered. The muscles of the neck and back were very rigid, while those of the face were less so, which enabled me to pass my three fingers into the mouth without much diffi-

culty. I thus managed to give him eight drachms of purging mass and two drachms of opium in combination. After which his face, neck, and back were well rubbed with a liniment composed of *Oleum Tereb. et Liquor Ammoniaë Fort.* I thought it was treating an animal under great difficulties, but still I persevered, and having once got the bowels open I kept my vantage ground, and eventually brought my patient round. He was afterwards sent to the Crimea, and was ultimately sold to the Russians in Kertch.

I had not had many horses under treatment before I discovered that the doses of medicine which we are in the habit of giving in England are absolutely dangerous to administer in the East. Frequently have I smiled to myself, and fancied that I was becoming a complete veterinary homœopathist, when I have directed my farrier-major to prepare medicine. Instead of giving six or eight drachms of aloetic paste, I found three or four to be ample; and also that half an ounce of diuretic mass was equal in its effects to an ounce at home. Nitrate of potass had to be given in drachm doses, and sulphate of magnesia in quantities of four ounces instead of a pound.

It is very desirable that this subject should be still further investigated, and that an endeavour should be made to ascertain what are the effects which climate exerts over the action of medicines. Surely the members of our profession in different countries, and especially those in the army, might throw some light on this subject.

It is a very important point, when on field service, to pay great attention to the picketing of your horses, not only for their safety but for the preservation of their health. All the horses under my care were fastened by the head, with heel-ropes behind; but the mules were secured by the head only. The Russians adopt a better plan than this, but which I cannot now more particularly refer to.

On visiting the camp one morning, in a heavy storm of rain, I found the horses making a great noise, and struggling with all their might to break away from the heel-ropes. The cause of this was at once apparent—they had their faces to the storm. I ordered the heel-ropes to be loosened, when they immediately reversed their position and became perfectly quiet. Animals should always be picketed so as to be able to change their position, and thus protect themselves somewhat against both wind and weather. As it was impossible to get a wooden shed for my sick horses, and finding that they began to suffer from the cold winds and rain which prevail in the East at the latter end of Septem-

ber, I had a large screen, made of underwood, placed around the portion of ground set apart for my use, and although open above, I found that the horses, being no longer directly exposed to the wind, suffered no ill effects from the rain.

About the latter end of August we heard that a dreadful *murrain* (every epizootic in Turkey amongst cattle is called by this name) was destroying immense numbers of cattle in Asiatic Turkey. By degrees we heard of its nearer approach, and as it was just at this time that we were purchasing bullocks, and knowing that they had been driven some 600 miles from the interior, we became doubly cautious in our dealings. The French, who were also purchasing about the same time as ourselves, and whose camp was a few miles from ours, first received the contagion. I was very suspicious about a lot which we bought the week following, and which I wished consequently to have rejected; but we were obliged to have them, and in a few weeks the disease made its appearance in our camp also.

The cattle in which the disease first commenced had during their journey suffered much both from want of food and water. They came at once to a liberal allowance of barley and cut straw, the former of which we had no means of steeping for them. Every day they were driven a few miles on the hills to pasture. On their return one evening I was informed by the superintendent in charge that one bullock had dropped dead on the road, and that another had fallen since their return, and that he did not think it could live many minutes. I hastened to the camp, and found the animal in *articulo mortis*; the limbs were rigid, the eyes sunk in the head, breathing scarcely perceptible, pulsation imperceptible, fæces thin, and of a light, dirty colour, and mixed with a considerable quantity of blood, having also a very offensive odour. I at once perceived that I had to deal with a disease of no ordinary character, but unfortunately I had to proceed the very next morning, at half-past five, to Constantinople, to purchase horses. As I was likely to be detained several days I requested the late Mr. Scott, M.R.C.V.S., to attend to anything which might arise during my absence, and I likewise ordered the quarter-master of the division to have the whole stock carefully inspected with a view to the separation of any animal that appeared to be unwell, and on no account to allow them to be driven with the others to the hills, or even far from the camp. On my return three days afterwards, I found that seven others had died, and that several more were affected with the disease. Under these

circumstances I proceeded to inspect the entire herd and to make a *post-mortem* examination of one that had only expired a short time previous to my return.

(*To be continued.*)

ACUTE PLEURISY ASSOCIATED WITH GANGRENE OF THE UTERUS FOLLOWING ABORTION.

By W. FURNIVALL, M.R.C.V.S., Kington.

ON January 29th, 1857, my attendance was requested to a brown cart-mare, sixteen hands high, the property of A. Iveson, Esq., Glasbury, Radnorshire, at least sixteen miles from this place, which the messenger stated had cast a seven-months' old foetus this day at noon. The foal, and also the placental membranes, were partially decomposed, and in expelling them the mare was found to strain violently.

History.—This mare had been purchased at Brecon Fair in September, 1856, from a dealer residing in Ross, for £39 10s., who warranted her not to be in foal; and from the day of her purchase to the time of her abortion she had been used for hauling timber, and was kept in very high condition. About 9 a.m. the manager noticed the water-bag, as he called it, to protrude, and very soon afterwards it ruptured; but having no idea that the mare was pregnant, he resolved to wait and see what was amiss with her, before he came for me, when seeing that the fore legs of the foal were projecting, he at once started off.

On my arrival I found the patient in a weak state; pulse quick and soft; mucous membranes of dirty yellow colour; extremities cold; partial rigors; and a thin and fetid discharge from uterus. I contented myself by administering a mild diffusible stimulant, and had the body well clothed; applied friction and bandages to her legs, and ordered a warm bran mash and chilled water *ad libitum* to be given.

By 5 p.m. she appeared to be better, but as I did not like the uterine discharge, I directed the attendant to inject tepid water twice a day into the vagina, and to continue it until I again visited her. I also instructed him to give her mashes, chilled water, and but little hay.

31st.—On entering the box this morning, I found that the respiration was somewhat laboured, that the mucous

membranes were intensely reddened, the extremities cold, and the pulse oppressed, and that the patient frequently inclined her head to the right side. She had not yet lain down, and appeared to be afraid to move from her present position. Venesection, to the extent of four quarts, was had recourse to, and Ext. Belladonnæ, ζ ii, was given in ball. The legs were also stimulated with Lin. Tereb.; an extra rug was put upon the body, and plenty of fresh air allowed.

10 p.m.—The mare is evidently more easy, and has eaten part of a warm bran mash. I introduced my hand gently into the uterus, and was enabled thereby to remove some very offensive matter; after which the vagina was well washed out with

Opium, ζ ij;
Aqua Calida, Oij. M.

February 1st.—The mare remains in *statu quo*, but the uterine discharge is now copious and of a blueish tinge. I injected a very weak solution of Zinci Sulph.; repeated the ball, and gave orders for her general comforts to be attended to. She has eaten a little hay, and two mashes, and taken freely of chilled water, as well as of oatmeal gruel.

At 3 p.m., of this day, finding there was but little improvement in the general symptoms, I had recourse to auscultation and percussion of the chest, the result of which led to no hesitation on my part, in expressing to the manager my opinion, that it was a hopeless case; for, independent of the uterine disease, hydrothorax was present to a great degree.

3d.—I was again summoned in great haste to see the mare, who, after standing 144 hours in one position, was said to have suddenly dropped down, and to be totally unable to rise. On reaching Glasbury, I found she had been dead about ten minutes, when I ordered her to be sent to the kennels immediately, in order that I might make a post-mortem examination.

Autopsy.—Liver soft, and enlarged to double its normal size; uterus in a state of decomposition, particularly its lining membrane. It contained some dark-coloured and fetid fluid. The other abdominal viscera were normal. On opening the thorax, a large quantity of serous fluid gushed out; both the lungs were diseased, and attached to the costal pleuræ by bands of lymph, at least half an inch in thickness: the pericardium was likewise thickened, and layers of semi-organized fibrin existed between it and the heart, which organ was very small for an animal of her breed and size.

CASES OF STRONGLES WITHIN THE ARTERIES OF YEARLING COLTS.

By G. J. MATHER, M.R.C.V.S., Doncaster.

ABOUT twelve months since when practising in the South the following cases came under my notice, and never having read in any of our veterinary works, or heard mention made of such a disease (excepting that veterinary surgeons had *occasionally* met with it), I thought perhaps you might deem the following particulars not unworthy of a place in the *Veterinarian*. It was thus only by chance that I was enabled to learn the nature of the complaint the animals were labouring under, and that in the following manner:—The subjects of the disease were blood foals, varying in age from 7 to 10 months, and one of them having been found dead in the field, I was sent for to make a post-mortem examination, it being suspected that the animal had been poisoned.

On examining the foal previously to opening it, I found the body to be very much emaciated, and that the abdomen was greatly enlarged. On percussion of the belly, I detected the presence of a small quantity of gas, mingled with a fluid, which I concluded was of a serous nature. From this circumstance I came to the conclusion, that the animal had died from ascites, but on opening it I found the abdomen to contain quite a gallon of pure blood. On removing the viscera, I at once saw that the hæmorrhage had come from a rupture of the posterior aorta, just in front of the renal arteries. I dissected out the vessel to nearly its whole length; and on examining it, I thought, at first, that simple aneurism existed; but on cutting into the dilated portion near to the rupture, I found, much to my surprise, that the vessel was completely choked with myriads of small worms similar in appearance to the filaria which we find in the bronchial tubes of calves suffering from special bronchitis or “husk.”

The internal coat of the vessel was considerably thickened; in fact, it appeared to be lined with a false membrane, which no doubt had been caused by the irritation set up by these creatures. In all the arteries given off from the main trunk, were more or less of these parasites.

About a fortnight from the time of being called to this case, I was sent for to see another of these foals, which, the man informed me, had been found down and unable to rise. On examining it, I observed that the pulse was nearly imper-

ceptible at the jaw, the mucous membranes blanched, and the body very cold. I informed the owner that I was sure the foal was dying from internal hæmorrhage; and that, in my opinion, it was suffering from the same complaint as the last. We managed, however, after some difficulty, to get the animal on his legs again; and immediately we had done so, it commenced voiding a large quantity of blood from the penis. Seeing there was no chance of recovery, we had the foal destroyed, when I made my examination, and found the bladder distended to repletion with blood. The right kidney was twice its normal size, and on cutting into it I found it filled with similar parasites. The renal artery was quite as large as one's finger, and it also contained a large number of these creatures. The posterior aorta contained thousands of them.

Two other foals, which were on the premises, I felt sure, from their appearance, were labouring under the same complaint, and the owner wished me to try if I could do anything for them. I must here say, that these foals had been taken off the mares at about six months old, and placed on some cold wet lands, where they had remained up to the time of my seeing them. The two surviving ones I had taken up, and put into the bay of a barn, so that they could be supplied with crushed oats, pea-meal, and good hay. I first gave to each of them for three successive mornings—

Ol. Tereb., ʒij;
Ol. Lini, ʒij. M.

and afterwards administered for a few days the following tonic:

Ferri Sulph., ʒss;
Pulv. Gent., ʒj. M.

These remedies were alternately employed for a fortnight, and I considered that the animals were gradually improving under their use, but at this time the owner saw fit to dispose of the foals, so that I afterwards lost sight of them entirely.

[Mr. Mather will find in the records of veterinary medicine several analogous cases to those he has related. They are not uncommon, and have frequently been brought before the notice of the students of the College by the professors.]

VENTILATION ON BOARD SHIP.

By G. FLEMING, V.S., Military Train.

THE late war furnished us with many examples of disasters arising from the imperfect manner in which the lower decks of ships, used in the transport of horses to and from the Crimea, were supplied with air. These mishaps occurred not only in stormy weather, when all the necessary openings connected with ventilation were obliged to be closed, but also in summer, when, from the intense heat and consequent rarefaction of the atmosphere, scarcely a breath of air could be inspired in the holds of these ships, where the windsails hung immoveably collapsed over perhaps 100 or 150 horses, without experiencing a painful sense of suffocation. A great amount of care and anxiety fell to the lot of the veterinary surgeon under these circumstances, and it was only by unceasing attention and the adoption of every measure that suggested itself, and could be enforced, that he was enabled to keep his charge in a state approximating to health.

In a ship with every available corner occupied by horses, the warmth of the weather causing the gases produced by respiration and by the decomposition of the urine and fæces to accumulate in spite of all disinfecting agents, and with no perceptible draught sufficient to cause any movement in the stagnated air, it is not to be wondered that asphyxia, congestion,—often acute—of the lungs and brain, and a host of other diseases incident to animals being kept in such situations, occurred. This was most frequently the case when ships came to be anchored in any harbour, though it also happened when at sea, but not to such an alarming extent. In the transport “Argo,” this was particularly observed. Detained in Balaclava Harbour from the morning of the 11th to the evening of the 12th July, 1856, the upper and lower decks crowded with horses and men, the last of the Crimean army,—the weather fearfully hot and dry, a hulk lying close on one side and a ship on the other, which effectually prevented the chance of a stray breeze being admitted and put a stop to all cleaning out—the atmosphere in the lower regions of the ship became closely allied, as I should imagine, to that of the black-hole of Calcutta. The consequence of this state of affairs was apparent long before the ship put to sea. Nearly every one of the horses were labouring under congestion of the lungs and upper air-passages, and two manifested acute congestion of the brain. Accelerated and laborious

respiration, quickened and feeble circulation, coloured mucous membranes, and engorgement of all the superficial veins to nearly double their natural calibre, with coughing and "blowing," were rife on every side. Those animals which were in the shade were covered with a profound perspiration, while the others in the sunlight were perfectly dry, but suffering to an insupportable degree from the flies. Well-bred and irritable animals showed more uneasiness than those of a coarser quality and phlegmatic disposition; hence English horses required most attention, as they became nearly mad, whilst the Bulgarian horses did not exhibit anything more than congestion of the lungs, and stood quietly.

On getting out of harbour, the sea being rather rough, about fifteen of them dropped down, and, to save their lives, slinging was absolutely necessary, for, not to say anything of the injury which might have been done them by the feet of the other horses, had they remained lying, they would undoubtedly have been suffocated from being placed in that heavy stratum of carbonic acid gas, which, in spite of the laws of gaseous diffusion, kept possession of the lower part of the hold. The prompt administration of diffusible stimulants, with sponging the entire body and head with cold water, and giving acidulated water to drink, proved of service in the majority of the cases, but others required energetic anti-phlogistic treatment.

All this arose from a deficient supply of air, and from the absence of such arrangements whereby a current or motion might be produced, so that the poisonous material thrown off by the lungs and other excretory channels might be removed, or at least rendered less noxious by being diluted with the higher and more pure atmosphere. The volume of air consumed by each animal in such hot weather must be something enormous, if the conditions of health are to be maintained sound and perfect by a proper aeration of the blood in the pulmonary apparatus and on the surface of the body; and when stimulants require to be given this consumption of air and the production of carbonic acid gas must be very much increased, so that every measure calculated to facilitate the supply of the one and the removal of the other, ought, in these days of improvements, to be carefully attended to.

Of course, on shipboard we cannot expect to have so perfect a ventilation as we have in our stables, especially in those emergencies when every inch of room is valuable; but this ought to be the very reason why it should be improved, for horses taken from airy and roomy stables, and thrust

suddenly into confinement and a vitiated atmosphere, must be exposed to many dangers, and the same thing is incurred on their leaving the ship.

The windsails cannot always be depended upon, and at the best they are inconvenient, as they only partially clear out the hold; and in many cases, by directing a current of cold air upon the backs of horses standing underneath them, colic is thus given rise to. In stormy weather, too, they are useless, and in warm weather they are but little better, so that I think other means might be had recourse to, which would accomplish the desired purpose at a very little expense. Might not something in the shape of a pair of fanners, be placed in the hold, having a communication with one or two windsails above on the deck; and which in those ships propelled by steam, might have the necessary moving power given to them from the engine. What a benefit it is to the firemen in such ships to have a small leaf performing a backward and forward movement by means of the engine. A far greater one would accrue from the adoption of a similar principle in the holds where animals are kept, and the fanner could be provided with a hose by which the air could be forced into every nook and corner. Even in a sailing ship, one or two men, three or four times a day, turning the machine, would be sufficient to effect a change for the better; and this, conjoined with proper cleanliness, &c., would render the thorough ventilation of such vessels, in a manner, independent of windsails.

The greater number of our disinfectants are of little use in such confined places, very often giving rise to odours nearly as prejudicial to health as those they are intended to destroy or alter; still I think that the more general adoption of the freshly prepared hydrate of lime, so much recommended by Liebig in his letters, would have a greater tendency to do good, by robbing the air of the carbonic acid, for which it has such a powerful affinity, is to be advised. The only thing to be said against its use is, that it gives off a large amount of watery vapour during its chemical combination, but this objection does not weigh much in comparison with its other good qualities. Three or four sievefuls placed in different parts of the ship would almost suffice for twenty-four hours, provided it was frequently stirred up.

CRIMEAN REMINISCENCES.

By THOMAS PATON, M.E.V.C., Military Train.

GENERAL EMPHYSEMA FROM A FRACTURE OF THE
RIBS BY A PORTION OF A SHELL.

AMONG the most remarkable cases which came under my notice after the explosion in the right siege-train was that of a French horse belonging to the "*Equipages militaires*," which, while running away from the scene of the catastrophe, was struck on the near side by a portion of a shell which caused a compound fracture of three of the ribs and an extensive laceration of the common integuments. This accident was quickly followed by a protrusion of the lung and general emphysema, which extended itself throughout the cellular tissue of the entire body, giving to the animal so remarkable an appearance that, in the distance, I imagined it to be the remains of a dead camel inflated by the gases of decomposition.

I am not aware that any veterinary writers have treated of emphysema, and this struck me as a case of some interest. The phenomena which precede death will, of course, be the same as in the human subject, namely, rupture of the pleuræ costales et pulmonales, and the process of respiration inflating the cellular tissue by a sort of pumping action, thus leading to ultimate asphyxia from compression of the lungs themselves.

As the horse was a "stray animal" of course he did not come under treatment, and, even if he had, it would probably have proved a fatal case.

GLANDERS IN A CAMEL.

It is an almost generally received opinion that the order "ruminantia" is altogether exempt from glanders, and which, from this circumstance and the great susceptibility of this species to it, is, in fact, styled an equine disease.

An opportunity which I had, in common with a professional friend, of making a post-mortem examination of a camel, which we came across in one of our rides, proved to us the capability of this dreadful scourge extending itself even to those animals which we had been accustomed up to that period to consider as secured from it by some peculiar and unexplained influence.

On exposing the Schneiderian membrane, by laying open the nasal cavities, we discovered that ulcerous condition of it which is characteristic of glanders. The "dug out" appearance of the ulcers with their ragged edges, the gluey character of the discharge, which lay in flakes on the membrane, and the odour of the broken up tissues, which was highly offensive, but easily distinguishable from that which belonged to the ordinary putrefaction of many horses, mules, &c., that lay in the immediate vicinity—all denoted the true nature of the malady. The ulcers increased in number the higher we carried our inspection, till we reached the cribeiform plates of the ethmoidal bones, where they were lost in the extensive disorganization there existing. Besides these lesions we found tubercles, miliary and aggregate, in the lungs. The muscular tissue throughout was pale, almost to whiteness; the skin corrugated from cutaneous disease; and the poor brute greatly emaciated.

Farcy buds, which firstly attracted our attention to the case, were present on the upper and lower lips. The sub-maxillary glands on both sides were likewise indurated, although not adhering to the jaw. As I could not obtain any history of the animal, I am unable to say how the disease originated, but it is not unlikely that it might have arisen from inoculation.

The case being undoubtedly glanders, its communicability to ruminants is rendered evident, but whether it is capable of originating with them or not remains to be proved.

TUBERCULOSIS.

A few days after the arrival of a large draft of fine mules from Valencia, Alicante, and Gibraltar, in the course of my inspection of them, I observed a fine mare of their number in a plethoric condition, breathing with much difficulty, and having a slight discharge from both nostrils. She was much depressed in her general appearance; the pulse was quick, mouth hot, breath offensive, extremities cold, and appetite totally gone.

These symptoms not justifying any antiphlogistic treatment, I gave stimulants, clothed the body, and bandaged the legs, anticipating an aggravation of the animal's sufferings. On the following morning my patient was much worse, and, in addition to the other symptoms, there was a drooping of the head, and a change both in the nature and quantity of the discharge, which now consisted of blood and pus, evidently coming from the lungs, while the breath was even more fetid

than on the previous evening. On auscultating the chest I heard, in inspiration, a decidedly musical sound on the right side, behind the scapula, as if the air in its passage rushed suddenly into a cavity, and was then carried to a sound portion of the lung. No respiratory sound was audible a little below the median line of the chest. On the left side the sounds of the heart, which were unusually distinct, interfered somewhat with a sort of gurgling noise, of which, from this cause, I could make nothing.

Being an interesting case, I visited the patient several times during the day and repeated my examinations, which only the more confirmed me in my first diagnosis, viz., that organic disintegration of the lungs existed, which was beyond the reach of human skill to eradicate.

On the next, the third, day, the discharge and other symptoms were greatly increased. The anxiety evinced in the general demeanour of the animal, the vacant and hopeless gaze, drooping head, hurried and oppressed respiration, were positively painful to witness. Death terminated the sufferings of the poor brute in the course of that night.

Post-mortem appearances.—On cutting into the right lung I discovered an abscess, *large enough to contain a man's head*, extending thence into the left lung through the mediastinum. The cavity contained a quantity of broken up lung-tissue, and no definite line could be traced between the diseased and the less affected parts. The lower portion of the right lung was also diseased and impervious to the air; adhesion had likewise taken place between the pleura pulmonalis and pleura costalis. All the other portions of the left lung appeared to be in a normal condition.

The heart and abdominal viscera presented nothing remarkable. As the journey by sea was not a long one, I should suppose that the disease existed at the time of purchase.

HÆMOPTYSIS.

One very hot day in the fall of 1855 I was desired to see a pony, reported to be at the point of death. It appeared that the animal had been ridden by a burly, inhuman Turk, in pursuit of stray mules, who managed after a long race to push the poor brute into camp, when it sank exhausted, and began bleeding profusely from the nostrils and mouth, the breathing being fearfully accelerated and oppressed. Not having medical means at hand at the time, I sent to the quarter-master's stores for half-a-pint of "ration rum," one half of which I administered, mixed with a little water, having

previously suffused the head and sponged out the mouth and nostrils with cold water. After employing plenty of friction to the body and extremities I had the animal well clothed and gave him the remainder of the grog, and in about two hours afterwards he got on his feet and continued standing till supper time, when I allowed him a light repast. On the following day he seemed to be going on very satisfactorily, and was enabled to return to light duty on the third day from the time of the accident.

SINGULAR ACCIDENT TO THE TONGUE.

My attention was called to a mule, by one of the drivers, who said "that it had got its tongue into the bit and could not get it out," and that he first noticed it at Kadakoi, on his way from Balaclava to our camp near Karain, a distance of about three miles, which he had travelled at a walking pace.

On examination, I found that the animal had thrust its tongue through one of the rings of the bit, by which the vessels had become strangulated, leading to so much swelling of the organ as to render its withdrawal altogether impossible. I first tried to contract the tongue by the production of a low degree of cold, enveloping it in snow, which I kept in a melting condition, by pouring water upon it. This plan would most likely have ultimately succeeded, but the process was a very tedious one, and as the patient was much exhausted, I determined to scarify the tongue freely, and to squeeze out the blood, by which means I was soon enabled to liberate the "forward member." We had no means at hand of cutting the ring, although that course suggested itself to us.

TRACHEOTOMY.

Previous to my departure for the Crimea, in 1855, I had under treatment a yearling filly, which was the subject of a rather singular form of strangles, and which many country practitioners can remember as being very prevalent in the summer and autumn of that year among very young animals, during the continuance of the easterly winds. The affection seemed to select any part but that which we usually consider the right one as the seat of the abscess, namely, the sub-maxillary space.

These abscesses appeared to have a decided partiality in most cases to form in the parotideal and laryngeal regions, and in very many instances they caused so much impediment to respiration by their mechanical pressure, as to

render this otherwise manageable affection rather difficult of treatment. In the present case, abscesses were formed in each of the spaces between the bifurcations of the jugular veins. They also extended along the neck from the root of the mane, near to the second cervical vertebra, to the points of each shoulder. Besides these, there were several other superficial abscesses on the body, all of which except those in the parotideal region, contained pus of a good character. Some of them appeared indolent, particularly those about the throat, and to them I applied stimulating liniments. The pulse was full and much accelerated, and the breathing laborious, while the noise made both in inspiration and expiration was so loud as to be heard at a considerable distance.

There was likewise a great degree of languor present, with drooping of the head and protrusion forwards of the nose, as if the animal was desirous of bringing the nasal passages in a straight line with the trachea, for the more ready admission of the atmospheric air to the lungs, or for the more easy obtainment of the cooler air from the surface of the ground. The appetite had entirely failed, the deglutition of fluids was also very difficult, but the action of the bowels was normal. Having sounded the frontal sinuses and examined the nostrils and mouth, and satisfied myself of the absence of anything that could account for the great difficulty of breathing, I concluded that it arose from the formation of an abscess, whose position could not be well decided upon, as the parotideal tumours did not seem to me to be capable of giving that amount of pressure needed to impart so much oppression as was exhibited by my patient. Such being the position of affairs, I determined on opening the trachea, which I did by first cutting through the skin and cellular connection of the sterno maxillares muscles, and then simply making an incision about two inches in length, through three of the tracheal cartilages, commencing at about the fourth. I was under the necessity of making a tube on the spot out of some iron piping of a convenient thickness, which though rude in construction answered the purpose admirably well. I inserted this in the opening, and secured it in its place by means of a tape passed round the neck. On the introduction of the tube there was an immediate transition from a state bordering on asphyxia, to comparatively an easy, though artificial breathing. After some time had elapsed, a little frothy mucus accumulated within the tube, blocking it up, when the noise returned and I found it necessary to remove the tube in order to clean it and the opening also into the windpipe. Instruction for its occasional removal, cleaning,

and re-insertion, were given, and the animal was ordered sloppy bran mashes and gruel, with an occasional handful of clover in it.

No medicine was attempted to be administered, but steaming of the nostrils, throat, etc., with hay soaked in hot water, and the application of warm fomentations at intervals to the tumours, were principally depended upon.

The body was also warmly clothed, and every attention given to the animal's comfort, by placing it in a warm but well-ventilated box. The day following the operation my patient was a little better, but its owner had been much alarmed by the return of the difficulty of breathing in consequence of the tube having slipped from its position leading to a closure of the opening. By readjusting the tube he found that the noise quickly ceased. Some tonic medicine, consisting of the Ferri Sulph. mixed as a powder with the gruel, was prescribed, and the other treatment continued. About the fifth day there was a free discharge of pus from the nostrils, and the abscesses on the surface of the body were also opened. The breathing was by this time much improved, which I ascertained by closing the orifice of the tube with my finger. As the tumours in the throat did not suppurate externally, I suppose that the purulent secretion had escaped chiefly by the pharynx.

On the eleventh day I removed the tube, and as the respiration was now carried on easily by the proper passage, I discontinued its use entirely, washed the wound, and kept a thick pad of wetted tow applied loosely over it; and for the more effectual protection of it against the admission of foreign bodies I enveloped the neck in an eight-tailed bandage.

A day or two afterwards, as the granulating process seemed to be going on a little too rapidly, the wound was touched with the nitrate of silver. The healing process was proceeding favorably, and the constitution of the animal improving to my entire satisfaction, when I was necessitated to leave the case in the hands of Mr. Fishwick, of Burnley, for whom I undertook it, and from whom I have had the pleasure of learning that the animal has continued to do well, and that she presents no traces of the operation more than a slight mark where the opening was made.

VENTRAL HERNIA IN A HEIFER. OPERATION. CURE.

By GEORGE LEWIS, Monmouth.

IN September last I was requested to examine a heifer, which was said to have a "swelling on her right side."

I found her with a pendulous bag hanging very low in the right flank, and of an immense size. Upon a close examination of the parts, I ascertained that the enlargement was produced by an escape of the intestines through a rent in the abdominal muscles. I informed the owner that nothing short of an operation could be productive of benefit to the animal, and I also pointed out to him the nature of the case, and its probable results.

According to arrangement, the heifer was sent to me on September 6th, when, after due preparation by medicine, &c., I had her cast and secured, and then carefully made an opening through the skin and paniculus muscle, immediately over the laceration in the other muscles, but a little longer than it. I thus exposed the rent which existed in the external, and also the internal oblique. The edges of the aperture were very uneven, and much thickened; and I may state in this place, that the enlargement had been observed a month prior to this date. A large portion of the intestines were found to have escaped into the sac formed by the paniculus and common integument; besides which, a considerable quantity of serous fluid existed beneath the skin, and externally to the paniculus, which had doubtless been thrown out by the injured vessels.

The intestines being returned into the abdominal cavity, the edges of the laceration were brought together with strong metallic sutures, and properly secured. The external wound was then closed; and before allowing the animal to rise, I passed a seton through the most depending portion of the integumental sac, with a view to give a gradual and continuous exit to the serous effusion. A compress was also placed upon the part, to remove as much of the pressure of the viscera as possible, after which the animal was allowed to rise.

For several days the bowels remained obstinately constipated, and some symptomatic fever was also present; but by proper measures, these unfavorable symptoms were soon removed. The animal was only allowed linseed tea and thin

gruel for a few days. Subsequently a large amount of serous fluid was discharged through the openings made for the introduction of the seton; it, however, soon ceased. The sutures also came away in due course, leaving but little appearance of the original injury.

Contemporary Progress of Veterinary Science and Art.

By JOHN GAMGEE,

Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

(Continued from p. 155.)

PANCREATIC SECRETION.—We last month recorded Bernard's views on the physiology of the pancreas—Colin's article on this subject in his 'Physiologie Comparée' is based on original experiments performed chiefly on the ox. Colin finds that the pancreatic secretion is irregularly intermittent, and it appears that it is poured into the intestine in largest quantities at the time and a little after rumination becomes suspended. It is excessively difficult to ascertain the normal state of this secretion, and the gland's function is disturbed under the slightest influences.

Comparing the biliary and pancreatic secretion, as Colin has done in experiments on the pig, it is found that the pancreatic juice is formed in larger quantities when the bile is not actively secreted.

During the first minutes after the duct of the pancreas has been opened, the fluid is as limpid as water, and slightly viscid, and its viscosity augments with cooling, but in the course of a few hours is not observable. Tiedemann, Gmelin, and Schulze have found that its reaction was acid; but it is constantly alkaline even after it has commenced to undergo decomposition. Its taste is saltish, and its odour not characteristic. In the dog it is very dense and coagulable directly after the pancreatic fistula is formed, but in the horse and pig it is not so.

Colin is inclined to look on differences in degree of limpidity and power to coagulate as dependent on the greater or less activity of the secretion, and that it is really the same in all animals.

The composition of the pancreatic juice has been determined in the horse, dog, and sheep. The proportions of albumen it contains vary according to different authors. This evidently depends on the time the fluid has been collected, and on the degree of activity of the secretion; on the animal whence it is obtained; and, lastly, on the more or less normal condition of the pancreas, which is the most sensitive gland of the body.

According to Colin, the pancreatic secretion is intended, 1st, to convert starchy matters into dextrine and grape sugar; 2dly, to emulsionate fats. The first of these properties was discovered by Messrs. Bouchardat and Sandras, the second by Eberle and Bernard. It appears that the albumen of the juice is the active principle on which its peculiar properties depend.

A mixture of bile and pancreatic juice is capable of emulsionating and acidifying fats in proportion to the quantity of the last-mentioned secretion contained in the mixture. The product of the glands of Brunner, if mingled with it, does not increase its activity. There is yet a question to solve, according to Colin; and that is, whether the pancreatic juice be indispensable to the absorption of fat, and to the general digestive process.

Turning again to Bernard's '*Leçons de Physiologie Experimentale*,' there are yet five Lectures to analyse on gastric and intestinal digestion, and on the final object of the digestive function. In speaking of the saliva, we have seen that, as a general rule, food is only triturerated and moistened in the mouth; it thus enters the stomach without having suffered appreciable chemical modification. In the stomach the chemical changes really begin.

GASTRIC JUICE.—The gastric juice is a clear, colourless, transparent liquid, with acid reaction, and containing, according to Tiedemann and Gmelin:

1. Hydrochloric Acid.
2. Acetic ,,
3. Butyric ,, only in the horse's stomach.
4. Salivary matter, recognised by being soluble in water, insoluble in alcohol. It has been seen in the horse and dog.
5. Osmazone.
6. Chlorides.
7. Alkaline Sulphates.

Alkaline carbonates and phosphates were never found by the above-mentioned authorities. The alkali is in great part soda, and the ashes likewise contained a little carbonate and

phosphate of lime, and sometimes even sulphate of lime and chloride of calcium.

In the horse, the soluble part of the ash was chiefly an alkaline chloride, and but little sulphate. Soda was the predominating alkali, but there was also a little potash. In one horse was found much chloride of calcium and magnesium. The insoluble portion of the ash contained carbonate and phosphate of lime, a little magnesia, oxide of iron, and perhaps even a little oxide of manganese.

Leuret and Lassaigue give it, as the result of their analyses, that the gastric juice is composed of

Water	.	.	.	.	.	98
Lactic Acid	.	.	.	.	.	2
Hydrochlorate of Ammonia	.	.	.	.	.
Chloride of Sodium	.	.	.	.	.
Animal Matter soluble in Water	.	.	.	.	.
Mucus	.	.	.	.	.
Phosphate of Lime	.	.	.	.	.
						100

According to Blondlot,

Water	.	.	.	.	99
Salts	{	Acid Phosphate of Lime	.	.	1
		Phosphate of Ammonia	.	.	
		Chloride of Sodium	.	.	
Organic Matters	{	Aromatic Principle	.	.	
		Mucus	.	.	
		Peculiar Matter	.	.	
					<hr/> 100

Beaumont had said something respecting the composition of the gastric juice of man. Recently there have been some more complete researches on the subject, and three analyses by Otto have shown that—

The gastric juice of man contains an albuminoid substance (pepsin) which coagulates at 100° centigrade.

Butyric and lactic acids, which must be looked upon as the results of metamorphoses of the hydro-carbonaceous elements of food under the influence of heat.

The gastric juice of man does not contain free hydrochloric acid.

The acid and the organic material, pepsin, are the active principles of the gastric juice, and Bernard's experiments to determine the nature of the acid lead him to believe that it is the lactic. He says, "In summing up these experiments we find that lactic acid and the acid of the gastric juice have

as characters in common the properties of being unaltered by heat, of passing off with watery vapour during distillation, and of separating hydrochloric acid from the chlorides. In following out the comparison between these two acids, we have found that the acid of the gastric juice has all the properties which Pelouze ascribes to lactic acid; these two acids form alike salts soluble in water with lime, baryta, zinc, and copper; a salt of copper which forms with lime a soluble double salt, the colour of which is more intense than that of the simple salt; a salt of lime soluble in alcohol and precipitated by ether from its alcoholic solution."

The free fats are not acted upon by the gastric juice; but the vesicles and connecting fibres of fatty tissue are dissolved by it. Starchy principles suffer disaggregation; but are not altered chemically.

By prolonged contact, cane or beet-root sugar may assume the form of grape sugar; this retrograde change occurs perhaps in virtue of the acidity of the gastric juice. Grape sugar may become converted into lactic acid by similar prolonged contact.

Gastric juice has a very evident action on the nitrogenized elements of food. Flesh is converted into a grayish mass, chyme. This only depends on solution of the connecting areolar tissue, and is more rapid with cooked than raw meat. The same occurs with glandular or nervous tissue.

There are many complex elements on which the gastric juice exerts a peculiar action, such as on coagulated milk and boiled albumen, both of which it redissolves, or on bone, which it digests; that is to say, the gastric juice dissolves the albuminoid constituents of bone, so that the earthy matter is set free, and most of the latter is passed on as excrementitious. Thus the gastric juice acts quite differently to simple acidulated water, which dissolves the calcareous portion and leaves intact the animal basis of osseous texture.

The epidermic tissues of animals and vegetables resist the action of the gastric secretion.

In the foregoing operations the gastric juice is effective in virtue of its acid and organic principle; but it may act simply as a dilute acid, such as on iron filings and on certain salts. Thus the cyanides are quickly decomposed on reaching the stomach from the hydrocyanic acid being set free by the acid of the gastric juice, which accounts for the rapidity with which the symptoms of poisoning manifest themselves. If, then, we wish a substance to be specially acted upon as by an acid it must be introduced into the stomach during active digestion, and persons have said that it should not be combined with

alkalies, which would neutralize the acid principle; but the alkali in small quantities so activates the secretion by the gastric glands that the neutralizing effect of the alkali is more than compensated; and if, for example, with iron, a little carbonate of soda be exhibited, the solution of that iron will be more speedily effected than if iron alone enters the stomach.

21, DUBLIN STREET, EDINBURGH;

March, 1857.

Facts and Observations.

THE NUTRITIVE PROPERTIES OF THE CAROB BEAN.

IN consequence of the different statements which have recently appeared relative to the value of the locust bean for the feeding of horses and cattle, the Council of the Royal Agricultural Society directed the attention of Professor Way to the subject, and the following analyses have just been sent to the Council by him, from which it appears that these beans contain but a small *per centage* of nitrogenized matter, and a very large quantity of sugar. Their use for the feeding of cattle, and for which they have been principally employed in England, appears not to be warranted by continental experience, as in those parts of southern Europe, and in Italy in particular, where they abound, they are given almost exclusively to horses. The seeds are found to pass through the alimentary canal of cattle unaltered by the digestive and assimilative processes to a far greater extent than in horses, which probably arises in part from the difference in the time the two animals take in masticating their food, the act being less perfectly accomplished by the ox than the horse, unless the food should be subjected to remastication, as in the process of rumination, but which aliment of this particular description is not very likely to be, differing so essentially as it does from hay and allied provender. Hitherto from the great amount of syrup which exudes by pressure from the pods, and which clogs up our ordinary crushing machines, no simple and effective method has been found to comminute the seeds, and from this cause also the greater part of the flesh-forming property of the carob is lost.

“Analysis of carob beans imported from Sicily by Messrs.

Hadley, of the Old Jewry, and supplied to Professor Way by Mr. Scott, of 5, Charing Cross :

Sample of Locust Bean, analysed December 1855.

Moisture	13.43
Albuminous Matter	4.06
Oil	6.76
Woody Fibre	12.42
Sugar, Gum, &c.	49.31
Other Organic Matter	7.60
Mineral Matter	6.42
	<hr/>
	100.00"

"In the sample of locust bean supplied by Mr. Scott, and analysed at the request of the Society, the seeds were found to constitute about eight per cent. of the entire weight; they were separately examined for sugar and albuminous matter, with the following results :

	PODS.		SEEDS.
Sugar	60.00 per cent.	. . .	13.11 per cent.
Albuminous Matter	3.23 ,,	. . .	13.90 ,,

J. THOMAS WAY."

March 10, 1857.

PLEURO-PNEUMONIA AND INOCULATION.

THROUGH the kindness of Mr. Ernes, M.R.C.V.S., Dockhead, we are enabled to give the conclusions to which Dr. M. Reviglio, of Turin, has arrived in his investigations into the supposed prophylactic influence of inoculation against pleuro-pneumonia, and which he has just published in his work entitled '*Sull' inoculazione quel mezzo profilattico della Pleuro-pneumonia epizootica negli animali della specie bovina.*' Dr. Reviglio treats of the subject *in extenso*, and gives a summary of the reports which have been made by the several commissions appointed to investigate it by Austria, Prussia, Holland, Belgium, France, England, Piedmont, and the Lombardo-Venetian kingdom, from which he deduces, as well as from his own experiments—

"1st. That this inoculation, discovered and recommended by Dr. Willems, is not based on scientific principles.

2d. That all the facts obtained by the several experiments

have concurred in showing that the *virus*, when introduced into the living tissues, produces inflammation in no way different from that caused by setons, &c., except that it has a greater tendency to a gangrenous result.

3d. That if we admit its revulsive effects, it still possesses no advantages over therapeutic agents in common use in veterinary practice.

4th. That as inoculation is frequently followed by serious and sometimes fatal consequences, it is just and reasonable to give a preference to the usual derivatives.

5th. That should it happen to be, as Dr. Willems pretends, a prophylactic, for which there seems, however, to be no valid ground, proofs are wanting of the inoculative qualities existing the serum exuded from the lungs, and therefore its employment can be of no benefit."

TREATMENT OF PARTURIENT APOPLEXY.

Mr. C. S. GREEN, M.R.C.V.S., Winchester, informs us that he has been generally successful in his treatment of dropping after calving (Parturient apoplexy) by dividing the depressor muscles of the tail, as in the common operation of nicking, with the special view to the cutting asunder the coccygeal nerves, in conjunction with the ordinary treatment often had recourse to in this disease.

Such a means of giving a shock to the nervous system for the purpose of restoring its suspended function is not new; and we have known it often resorted to in this affection, but without benefit. It seems to have had its origin in the cow-leech's idea of "tail-slip" being the cause of the inability of the animal to rise.

We are of opinion that Mr. Green's success depends rather on his early withdrawal of blood and the free use of cathartic agents with active counter-irritation to the spine, which it appears is the plan he adopts.

Extracts from British and Foreign Journals.

THE CATTLE TRADE AND MEAT SUPPLY AT HOME AND ABROAD.

THE supply of animal food and of fresh meat for our population is an important item of production and trade, and the traffic necessarily increases with the growth of the population, the increasing aggregated masses in large towns, the higher wages now earned by the labouring and manufacturing classes, and the more general diffusion of wealth among the bulk of the people.

The efforts of the graziers, important and progressive as they have been, are quite inadequate to meet the increasing demand, and hence we find that the live-stock imported has almost uniformly increased year by year. In 1850 we imported 217,247 head of all kinds, while on the average of the last three years the number imported from the continent has been 326,206 head annually. But it is chiefly in the cattle (oxen, cows, and calves) that the increase is manifest, the number imported having risen from 66,462 in 1850, to 97,527 in 1855.*

Confining our attention at present to cattle, and using the imperfect data at command, we may enter into a few calculations which will prove interesting at this season. In 1851, the cattle in Great Britain were estimated to amount to 4,500,000. For the present year we have the returns for Scotland and Ireland, which amount, in the former country, to 974,816, and in the latter island, to 3,584,723 head. It is generally considered that about a fourth part of the entire stock is annually slaughtered for consumption, and we may therefore take it at two million head of cattle. It is to the large towns that cattle, live or dead, are chiefly brought for consumption. The number of beasts shown at "the Great Christmas Cattle Market" has not very largely increased, but the weight and quality of meat are widely different from what they were some years ago. If we take the second important town of the kingdom—Liverpool—we find the cattle-trade there of a very large extent; upwards of 1000 beasts are killed there weekly, besides other stock. The Liverpool

[The number of importations, however, for 1856, of cattle, sheep, and pigs, is shown by the Government returns, to have fallen short of those of 1855; thus we received during the past year, 83,306 head of cattle in the place of 97,527 of the present year; 145,059 sheep instead of 162,642; and 9,916 pigs instead of 12,171.]

cattle-market is chiefly supplied from Ireland; the number of cattle and calves imported there by sea, in 1852, amounted to 176,000. In addition to these, large quantities are brought by railway from Scotland, and a few are driven in also from the immediate neighbourhood. At Newcastle, the cattle brought to market the last few years have averaged about 39,000 head; at Manchester, about 91,000; at Glasgow, 32,000; and at Wolverhampton, 25,000 head in the year. We are speaking only of oxen and calves. In Newgate and Leadenhall markets the supplies of meat now reach about 70,000 tons per annum, whilst throughout the kingdom the aggregate weight of butchers' meat consumed cannot be less than 750,000 tons a year.

Mr. Ormanby, an official on the London and North Western Railway, computed, in 1853, the cattle-traffic passing over all the lines of railway of the United Kingdom at 1,253,353 oxen, and 981,925 calves, the aggregate value of this stock being over £14,000,000: this is omitting pigs, sheep, dead meat, &c. In many things connected with food our knowledge is but conjectural, from the want of precise data, or any means of procuring accurate statistics; but whenever correct returns can be obtained, it is exceedingly desirable to place them on record, for further comparison and reference.

Our neighbour France has been increasing her imports of cattle and sheep, for while the number of oxen and cows received in 1854 was 90,946, in 1855 they numbered 113,469 head; so with sheep the increase was from 272,610 to 308,961. There was, at the same time, a large increase in the imports of meat, fresh and salted. The quantity imported in 1854 amounted to 59,805 metrical quintals: in 1855 it had increased to 105,028 quintals.

Although double the number of cattle are slaughtered yearly in France than are killed in the United Kingdom, yet, comparing the weight of meat, the proportion is largely in favour of British cattle. M. de Lavergne, in his recent work on our rural economy, estimates the average weight of British cattle at 625lbs., and those of France at only 250lbs. At 5d. per lb. the value of the beef produced in France annually would be but £16,000,000, while that consumed in the United Kingdom would be worth more than £20,000,000. One hundred and fifty years ago the average weight of a beast at Smithfield market was not above 370lbs., now it exceeds 800 lbs.

The gradual increase in the price of meat in France has been very great. From 1700 to 1763 the price of meat for

2lbs. was 5 sous; from 1763 to 1812, 9 sous; from 1826 to 1846, 11 sous; 1846 to 1853, 18 sous; and since that period there has been a further increase of nearly 50 per cent. The government has, therefore, been directing its efforts, by regulating prices and revising the tariff, to keep down prices. Compared with the British prices of meat, those in France are, however, low; but then the quality of the meat is most inferior. The duty on salt meats was also reduced, and larger importations have been made into France. There are about 600 butchers in Paris, and they are under great restrictions. A code of government regulations fixes distinct prices periodically for the various parts and joints of the same carcass.

The average quantity of animal food of all kinds consumed in France is stated, on good authority, that of M. Payen, to be as low as one-sixth of a pound per diem to each person. Even in the cities and large towns, especially Paris, the amount of food upon which a Frenchman lives is astonishingly small. An Englishman or an American would starve upon such fare. In France, in 1840, 3,699,200 cattle and calves were slaughtered. The population of Paris may be taken at 1,250,000.

If we cross the Atlantic, we find the city of New York, with its population of 600,000 souls, consumes on an average half a pound of meat a day to each person, or nearly 49,000 tons of flesh annually. Some returns given in the New York papers state the annual average consumption at 184,826 oxen, 12,014 cows, 543,445 sheep and lambs, 41,844 calves, and 281,051 swine. The number slaughtered, in 1853, was 191,766 oxen and cows, and 32,738 calves; the beef cattle averaged net about 575lbs., and the meat fetched 8 cents a pound. In proportion to its population, New York annually consumes as nearly as possible the same quantity of meat as London; more beef, however, is used, and less mutton, and the latter fact may be accounted for by the comparative inferiority of quality. Some of the cattle grazed on the prairies of the Western States are splendid animals. The average weight of each animal of the fine cattle herds usually brought to New York market from the Far West is stated to be 1,400 or 1,500lbs.; but some reach nearly double that weight. A Mr. B. F. Harris, of Champagne, Illinois, recently sent to Albany by the Central railroad 34 head of stock, averaging 2,400lbs. In the year 1849, this gentleman stall-fed nearly 1000 head of cattle, taken in from the rich prairies of that State, and in 1853, he fed and sold a hundred head of cattle which averaged 1,966lbs.; this lot having carried off the

first premium at the New York Show. The weight of meat will, however, seldom exceed half the live weight. In New York bullocks are seldom or never put upon the scales to determine the price to the butcher. The average weight of cattle, properly termed "beeves" in the New York market, is now about 700lbs.

In 1855, the quantity slaughtered was 172,000 oxen, and 10,720 cows and calves, and the price of meat was $9\frac{1}{2}$ cents a pound. Philadelphia slaughters about 90,000 head of cattle, and the total number of cattle consumed by the town population of the United States is set down at about 800,000 head, valued at £3,000,000.

The statistics we have given of slaughtered animals presents a startling and sanguinary array of facts of especial interest to the grazier; for we have in the present instance looked chiefly into the cattle trade. Few of us think, as we sit down to our rump-steak or pork-chop, our sirloin or leg of mutton, of the awful havoc of quadrupeds necessary to furnish the daily meals of the millions. If the hecatomb of animals we have each consumed in the years we have lived were marshalled before us, we should stare aghast at the possibility of our ever having devoured the quantity of animal food, and sacrificed for our daily meals the goodly number of well-fed quadrupeds of the ovine, bovine, and porcine races.—*Farmer's Magazine*.

LONDON SAUSAGES.

LONDON sausages—including the sub-divisions of save-loys, black-puddings, and polonies—have always been regarded as somewhat dubious articles of food; being neither fish, flesh, fowl, nor good red-herring. The process of their manufacture has been described as equivalent to a practical illustration of the adage, "Give a dog a bad name, and hang him." Horses, dogs, and cats are reputed to startle with prophetic dread at the sound of a sausage-machine; and writers on instinct can adduce no parallel incident to that recorded by the disconsolate sportsman, who, whilst regretfully whistling the summons of his lost Ponto, observed some sausages in a neighbouring window simultaneously wagging their tails. We have lately learnt that these insinuations present the proceedings of London sausage-makers in a rather favorable light. It appears that they consider tender young

horseflesh, the meat of a defunct poodle, or the mortal remains of a cat that has departed her ninth life, as

“Too good
For human nature’s daily food.”

It is their custom, as reported by one of themselves, to convert into sausages meat entirely unfit for human consumption; whether rendered putrid by keeping, or unwholesome by the diseased condition of the animal which supplied it.

Our information concerning the poisonous influence of diseased or tainted meat has hitherto been principally derived from continental sources. This is not due to any super-eminent honesty on the part of our British dealers, but to the absence of any effectual system of Medical Police in this country, until the appointment last year of the Medical Officers of Health. One of these gentlemen—Dr. Aldis, of St. George’s, Hanover Square, district—recently applied to the magistrate for an order to burn or bury a quantity of offensive and putrid meat (amounting to a hundredweight and a half) lying on the premises of a sausage-maker in Grosvenor Row, Pimlico, which was being converted into sausages. Dr. Aldis and one of his inspectors described the filthy state of the meat. The defendant then observed, “It would be quite useless for him to think of carrying on business if proceedings like the present were to be taken against him, for there was not a sausage-maker’s in London but where the same description of meat was used.” As regards this man personally, we may remark that it is possible society would recover the shock, even if he were to shut up shop.

Now, the experiments of Gaspard and Magendie have proved that putrid animal matter introduced into the system of healthy animals induced a disease closely resembling the typhoid fever of man; and Dr. Christison records a case where the lives of a whole family were jeopardized, and one of its members died, from partaking of broth made from meat like that above described. Amongst our London poor, who consume the abominable garbage of which, according to the above statement, cheap sausages are composed, it is not unusual to meet with cases of fever, the cause of which is involved in mystery; and it is impossible to believe that putrid meat, however spiced, may be eaten with impunity, especially by a half-starved human being, living in a vitiated atmosphere, and often with a gin-sodden constitution.

More than this, there occasionally occur, amongst our poor, cases of disease of a most anomalous kind, and pre-

senting many of those indefinite symptoms which accompany the disease recognised in Germany as due to unwholesome sausages, and distinguished as a special kind of poison. In Wirtemberg, there occurred, in twenty years, 155 cases, distinctly traced to the "sausage poison;" and of these 84 died. In districts where the sausages are eaten fresh, the disease is correspondingly rare. The symptoms are slow in progress and most indefinite: abdominal pains; tormina; oppressed respiration; irregular action of the heart; constipation, sometimes alternating with diarrhœa; diminution of the secretions and of nervous energy; a hoarse voice and frequent cough; a cold skin, with the hands and feet dry and hot. These are laid down as the most marked symptoms due to the influence of the animal poison, and which wear away the thread of life until death finally ensues from syncope. Now it is in no way proved that the sausage poison of Germany is confined to that country. On the other hand, we have it stated by a manufacturer, that the putrefaction most likely to generate a poisonous condition is the normal state of the sausages supplied for the food of the poor of London. The subject is one deserving earnest attention; especially as we are warned that the terrible murrain which in 1745 destroyed 80,000 cattle in one year is now approaching our shores. It is evident that the conscientious folks who cut up decomposed flesh into sausages would be little likely to feel any qualms of conscience about the conversion of diseased meat to the same purpose.—*Lancet*.

STABLE MANAGEMENT.

HACKS AND HUNTERS.

(Continued from p. 171.)

Turn we then to the hunter, and see how far he demands our consideration before and after his run with the hounds. It will be unnecessary to dwell upon the course of training proper to be carried out, as we are not writing for the stud groom, but mainly for those whose hunters will be most effectively trained by their performance of general work during the time they are not required for the field. Assuming, then, the animal to be in a condition to go, let us at the outset oppose our protest to the absurd system of giving no

food or water after six in the morning until the horse is returned to his stable at night; we should not mention such a thing did we not know it to be commonly done; and how an animal can be sustained during severe exertion under such circumstances it is difficult to see, particularly an animal like the horse, which naturally, from the conformation of his digestive system, is always feeding or sleeping. Remembering the time at which meets take place now, there can be no objection to the usual feed and water the first thing, and another feed and a smaller portion of water prior to starting, especially if the meet should be a few miles distant.

The sport being ended, the next course will depend on the condition of the animal. If the run has been moderate, the horse not exhausted, but still fresh and light in his rider's hand, his stable not many miles distant, let him be ridden steadily home at once, not walked all the way; because, after the excitement has passed off, the longer he has to bear his master's weight on his back the more he will suffer for it afterwards. The system of stopping on the road for an hour, to give the horse a pail of gruel,—which, by-the-by, should generally be read, to give the rider a chop and a glass of sherry,—is a bad one, if it can possibly be avoided; the stables are nearly certain to be bad, the accommodation altogether very rough; the horse, being merely a chance customer, is not much cared for, and probably gets cold and stiff before he starts again. Should, however, the distance from home be considerable, a little refreshment for man and beast may be necessary before the distance be completed; but as soon as the horse has taken his gruel, or water and a mash, or whatever can be obtained for him, by all means keep him moving. Arrived at his stable, he may be treated very much as the hack after a long journey; carefully dressed, well littered down, a bran mash with oats in it placed in his manger; and the next day be again, in most cases, ready for quiet exercise with the saddle on.

We have taken for granted that our hunter has been ridden by a man who knows his capabilities, has remembered that he does not keep a large stud, and has gone accordingly, giving his horse no more than a good day's work. But we must indulge a moment in a glance at the exclusive hunter, the animal that is cultivated for the special purpose, and whose owner would as soon think of using him in any other capacity as he would of losing him altogether. We must see him arch his proud neck as his rider takes him in his hand, and steadies him at the first "rasper" to the music of the ringing "Tally-ho!" We must follow him through "a good

thing," over a stiff country five and forty minutes without a check,—*alias* "a clipper." We will see him quietly taken back to his stable by the servant in attendance, and next superintend the arrangements for preventing the probably serious consequences of his severe exertion. If our establishment is properly supplied with all the requisites, washing all over with warm water is without question very excellent treatment; but unless quite convenient, and plenty of help at hand to dry the skin afterwards, it is much better left alone, and the ordinary grooming performed as rapidly as possible; a mash placed in the manger, after a pail of gruel or tepid water has been taken, the stable darkened, and the animal left to himself; no oats or beans should be dreamt of now, the stomach will shortly feel the effects of the general exhaustion, and be ill adapted to digest such food. The following morning may find the horse dull and stiff, but not so as to prevent half an hour's walking exercise being taken with advantage; let him have a feed or two of oats during the day, and by degrees return to his full feeding and exercise, a week sufficing to restore him to his former condition.

It may, however, happen that the exhaustion shall be extreme, the horse incapable of moving, and shrinking with fear from the touch of a finger; in such a case, we have found a newly stripped sheepskin placed over the loins for twelve hours a most valuable remedy, assisted by the horning down of good gruel, mixed with occasional doses of old ale. As the patient will not eat for a few days, by no means think of bleeding (many a fine animal has taken leave of society from such mistaken treatment); and should any more serious symptoms arise, send for proper assistance at once, remembering the old adage about "a stitch in time."—*Oxford Journal*.

THE TOBACCO QUESTION.

In a *resumé* of the arguments *pro* and *con* given in the '*Lancet*' on the "Tobacco Question," which has been discussed in that journal "during the last few weeks, with considerable animation and power," by numerous correspondents on both sides, the editor says: "The only course which is fair to either party is to collect together, in as short a form as possible, the ill effects attributed to the use of tobacco by the various correspondents, and to place them in juxtaposition with the good effects which other or the same

writers attribute to 'the weed.' The evils of tobacco have been collated from the printed letters, and are arranged simply according to the part in which the affection is produced, as mental, nervous, and respiratory system, and so on.

"*Tobacco is said to act on the mind* by producing inactivity thereof; inability to think; drowsiness; irritability; a peculiar condition—witness the frivolities, the light, undignified reading of the present day; an alarming passion for fraudulently obtaining and squandering money; a propensity to the indulgence of vicious habits; languor; loss of memory and of energy; hypochondriasis; hysteria; insanity; mania; suicidal mania; irritable temper.

"*It renders the nervous system* prone to—softening of the brain; apoplexy; paralysis; delirium tremens; paralysis agitans; amaurosis; giddiness; neuralgia; depravation of all the senses; loss of taste, smell; impairment of vision; it produces impotency, both moral and physical.

"*On the respiratory organs* it acts by causing consumption; hæmoptysis; an-inflammatory condition of the mucous membrane of the larynx, trachea, and bronchiæ; ulceration of the larynx; short, irritable cough; hurried breathing.

"*The circulating organs* are affected by irritable heart-action; irregular, intermittent pulse; accelerated circulation.

"*The digestive organs* are attacked by gastric irritation; rupture of intestine; horrible dyspepsia; irritable sensation after food; loss of secretory power of liver; heartburn; acidity; flatulence; proneness to dysentery.

"*On the generative system* tobacco is accused of producing the following effects: first stimulating the generative system, then diminishing desire, and annihilating the reproductive faculty; of frequently causing spermatorrhœa and impotence; that the children of habitual smokers are afflicted with enervation; hypochondriasis; hysteria; insanity; dwarfish deformities; consumption; painful lives; and early deaths.

"*On the blood and general system* it acts by so infecting the blood as to kill leeches, fleas, and bugs that bite the habitual smoker; by generating a poisonous principle in certain persons analogous to oxalic acid; by making the blood dark; often of a greenish-yellow colour; by producing excessive muscular irritability; typhus fever; cachexia; and lantern-jaws; by impairing nutrition; by causing baldness and skin diseases.

"*In the body politic* it is considered that it produces the following results: It impairs the vigour and energy of the English people, and causes them to sink in the scale of

nations; it has caused the governmental evils of Turkey; it ruins young men; pauperises working men; counterworks the ministers of religion; and renders the old women in Ireland troublesome to the dispensary doctors.

“Against these accusations the defence pleads generally, thus: That the accusers are arguing against the effects of the *abuse*, and not of the *use*, of tobacco; that every gift under heaven may, by the perversity of man, be turned from a blessing to a curse; that the use of tobacco is widely spread, more widely than any one custom, form of worship, or religious belief, and that therefore it must have some good or at least pleasurable effects; that if its evil effects were so dreadful as stated, the human race would have ceased to exist; that Christison says, ‘No well-ascertained ill effects have been shown to result from smoking;’ that Pereira observes, ‘It produces that remarkable soothing and tranquillising effect which has made it so popular.’

“Against the particular accusations, the defence argues: that smoking does not cause insanity, for more women are insane than men; that, on the contrary, it is a useful sedative in cases of insanity; that inability to think consecutively, whilst smoking, is disproved by the fact that Hobbes always smoked while writing: that as many great men have been smokers as non-smokers; that tobacco soothes mental and nervous irritability consequent upon exhaustion, and lulls the pain of neuralgia. That it is useful in the dyspnoea from congestion of the lungs, when the premonitions of phthisis threaten; that it lessens irregularity and rapidity of circulation from over-fatigue; that it aids digestion after a full meal; removes head-aches and uneasiness about the stomach, is useful as a laxative, is an excellent sedative in gastric and pharyngeal irritations.

“The effects on the generative system are said by the defenders never to be stimulating, but depressing in exact proportion in amount and duration to the quantity smoked; and that such effects are of value in these days of late marriages and forced celibacy. That moderate indulgence is followed by increase of weight; that it counteracts the effects of physical exhaustion; that Boecker has proved it to retard the waste of the body. That it is the luxury of the rich; but to the poor the solace of life.”

These are the assertions on either side: it is for our readers to estimate their value. They will judge how far the zeal, with which the accusers of tobacco have been fired, may have led them to attribute to its use more effects than can be produced by any one cause, and whether the diseases of the

mind and nervous system alone are not of such quantity as can scarcely be attributed to any one form of slow poisoning. Again: some of the reported results may possibly strike them as of a somewhat doubtful character—as, for instance, insanity, which is shown to be more prevalent amongst the non-smoking than the smoking sex. Again: an attack of typhus fever having been caused by smoking two cigars, will hardly appear to the pathologist compatible with the known actions of morbid poisons.

The defence requires a longer summing-up, and the evidence on that side a closer examination. In the first place, the separation between the *use* and *abuse* gives them a certain hold; because if once their opponents admitted that there could be a proper *use of tobacco*, the argument would be decided; and on the other hand, it is much more difficult to prove that indulgence to a small extent produces an evil, than it is to show that great abuse causes ill effects. The arguments relating to the great diffusion of the plant and the prevalence of the habit are well chosen. Such authorities as Christison and Pereira must have great effect, and their observations are usually considered as possessing considerable weight.

It appears, indeed, hardly possible that so much should have been done in this short time, for the collection of a sufficient number of well-established facts is a work of years.

The laity and smokers in general must have their attention most strongly directed to the fact, that no one, not even the most ardent defender of tobacco, has advocated a large indulgence in its use. The moderate smoker may not be injured by the habit; but the weak slave who all day long keeps a pipe or cigar in his mouth—who cannot work, read, think, nor even sit half an hour quiet unless he be smoking, will certainly have some, and deserves to have all, of the above threatened evils heaped upon his besotted head.—*The Lancet*.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

The Modern Horse-Doctor, &c. with illustrations. By GEORGE H. DADD, M.D., Veterinary Surgeon, author of 'The Anatomy and Physiology of the Horse,' and 'The Reformed Cattle Doctor.' Eleventh thousand, Boston, U.S., &c., 1856, pp. 432.

Were a M.D. in this country to lay aside his gold-headed cane, take his pen and write a treatise on horse-doctoring, we should expect something more than common-place matter from him. And yet he would be only returning to what was the custom of the ancient physicians, who, as Vegetius tells us, were in the habit of prescribing compounds for the horse too expensive to be generally employed.

The state of modern society has wisely brought about a division of medical science generally; but it would seem as yet not to be the case with our cousins in America.

In the infant days of the veterinary profession in England, practitioners of human medicine were among its earlier authors, and their works present us with much that is good, as well as much that is bad, because erroneous. Still there can be no doubt that their labours have tended considerably to render our profession more estimated than otherwise it would have been, and enabled it to rise to the position it now holds. We remember in our boy-days that it was not uncommon for the country surgeon to be asked, when attending some inmate of the farm-house, what should be done for a horse, or cow, or pig that might be ill; and one whom we knew very well felt his dignity not a little offended on being once solicited to prescribe for the last-named animal, and, in reply, he pettishly said, "Oh! give the old sow a clyster." The careful nurse did as she was bid, and, on the "doctor's" coming again, took care to tell him that the remedy had proved most efficacious, and further

that never in the whole course of her life had she known a *Christian* take a glyster more kindly !

Something like the same state of transition one might suppose is now passing in America, for before us is lying a work, the title of which is given above, which it appears has already run through ten editions.

We confess we do not like the title; the work savours too much of those written in days gone by for the book-sellers; nevertheless it gives proof of reading and research. The author has freely laid under contribution, and *generally* with acknowledgments, *allopathists*, *homœopathists*, and *hydropathists*, since he says in his prefatory remarks that "he now practises without regard to *sects*, selecting from the various systems those means and agents best calculated to aid, foster, and perpetuate the physiological state, without regard to their origin or kind, or whether they be mineral or vegetable; reserving to himself the right to reject every process and agent which militates against the sanitary forces of the body." Although there is much here we cannot exactly comprehend, still it is evident that he is no "specialist." It might have been thought that from so many sources a perfect whole would have been produced; yet are there many omissions. The simple fact is that too much has been attempted. Nor dare we say it is a failure, for then the public voice would be against us—not that this is always a true test of merit—the work having reached the eleventh edition, a patronage and support rarely given to veterinary works now-a-days in this country; we would it were otherwise. As it respects the medicinal agents directed to be employed, there is evidently a leaning to the use of Galenicals. Thus with a view to guard against cough and debility supervening upon influenza, Dr. Dadd recommends the following :

Powdered Elecampane,
 „ Pleurisy Root,
 „ Liquorice,
 Slippery Elm,
 Salt and Gentian, of each, equal parts.
 Dose, one ounce daily.

In the treatment of chronic, or mild, or subacute pneumonia, "which may be a continuation of that which was at first inflammatory and dangerous, sometimes requires nothing more in the way of medicine than to lubricate the respiratory passages, which are often left in an irritable state." In such cases, he says "take—

"Powdered Pleurisy Root,
 „ Elecampane,
 „ Blood Root,
 „ Caraways,
 „ Ginger,
 „ Salt,
 „ Elm, of each, 2 ounces;
 Linseed Meal, 1 pound.

Mix. Divide the mass into sixteen powders, and give one in the food night and morning."

"A cough occasioned by derangements of the digestive organs, or from worms, &c., may be always relieved by the following:

"Powdered Worm Seed,
 Whole Mustard Seed,
 Castile Soap Shavings,
 Powdered Golden Seed,
 „ Poplar Bark,
 „ Sulphur,
 „ Salt,
 „ Charcoal.

Mix; and divide the mass into eight parts, and give one every night in the food."

"The constitutional remedies" for nasal gleet, according to our author, consist of—

"Grains of Paradise,
 Powdered Marsh Mallows,
 „ Sulphur,
 „ Charcoal,
 White Mustard Seed.
 Dose, one ounce daily."

The above may be accepted as a pretty fair illustration of the medical treatment to be resorted to. We need hardly

say that such would not find many followers in this country, but rather that it was carrying us back to the days of old farriery—to the time of Gervase Markham, Blundeville, and others. Still we do not wish it to be thought that Dr. Dadd writes as one ignorant of his subject—far from it; indeed, the quotations he has made from various authors afford proof to the contrary. The practice simply differs in the two countries, and a few of the agents advocated by him we are not in the habit of using here. To some also we might raise objections; thus, as a “lithontriptic drench,” he recommends—

“Lime Water	2 ounces.
Honey	4 „
Infusion of Sassafras	1 pint.
To be given daily for a fortnight or more.”	

Now when it is borne in mind that urinary calculi in the horse consist of the carbonate of lime principally, surely in the above formula there can be no solvent properties, and it may be that it is rather calculated to add to the concretion than diminish it.

We could go on; but we abstain. We are only solicitous that the principles of our profession should be based on science, and then we are satisfied all will be well in the end.

THE ATMOSPHERE.

“THE subtle circumambient atmosphere—the most wonderful and useful of the works of God, essential to the vitality of every living thing—the scene of magnificent sights, and the grand messenger of nature—the medium by which light, sound, and odour, are dispersed—the vehicle, therefore, of beauty, music, and fragrance. It deals in detail with the phenomena of heat and cold, summer and winter, day and night, sunshine and shade, rain and drought, calm and tempest. It leads the mind, as well as the eye, to the morning mist, the noontide glory, and the twilight cloud; expatiates amid the loveliness and grandeur of creation, and bids us mark the silence of the stormless ether, the whispers of the rising breeze, and the noise of the mighty whirlwinds.”

THE VETERINARIAN, APRIL 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

CONTAGIOUS TYPHUS IN CATTLE.

WE wish in an especial manner to direct the attention of our readers to the circumstance that a most destructive cattle epizootic, new to the present generation of Englishmen, will probably ere long be introduced into this country from the Continent. The disease, which passes under the ordinary term of "murrain," possesses, according to the best and most recent veterinary authorities, most of the features of a malignant typhoid fever, and has consequently been appropriately designated "contagious typhus." The subject has already been brought before Parliament, as will be seen by a report of its proceedings, which we publish elsewhere.

We confess that the circumstance does not take us by surprise, for, from the time it was ascertained that the malady was existing in the Crimea, Turkey, and adjacent countries during the late war, we felt assured it would extend to those Kingdoms and States where it had been unknown, except by name, for years before; such being the antecedents of its history. It may be remembered that, at the period alluded to, at the solicitation of the Royal Agricultural Society, and also of the Consul-General of France, we commenced an inquiry into the subject, and forwarded a printed circular, containing a series of questions, to the several veterinary surgeons attached to the Army of the East, with a view to the obtainment of such information as would lead to the adoption of rightly devised means to arrest the progress of the pest. Unforeseen difficulties met us in this inquiry, and it, like many others undertaken during the first few months that our brave soldiers were encamped before Sebastopol, proved abortive. The state of things at that time is thus graphically described by the *Times* Commissioner: "On all

sides," he writes, "between the torn tents, dead cattle are rotting, and no one thinks of removing the pest-bringing carcasses."

A perusal of the questions, to which allusion has been made, will show that, from the first, we were solicitous that the disease should not be confounded with pleuro-pneumonia; and on every fitting occasion since then, and at the meetings of the Royal Agricultural Society in particular, we have endeavoured to point out the differences of the two epizootics. This has been the more needed because many agriculturists, and not a few medical men of eminence, as may be seen by the scientific periodicals, have fallen into the error of considering the disease to be pleuro-pneumonia in a more active form. Indeed, there is no reason to doubt that "contagious typhus" is identical with the malady which appeared somewhat suddenly in England, and first in the neighbourhood of London, in 1744, and which gradually extended itself over the length and breadth of the land, destroying its hundreds of thousands of cattle, and continuing its devastating effects with more or less severity down to 1752.

No correct estimate can be formed of the immense loss which the country then sustained; but it was ascertained by one of the Commissioners appointed by the Government of the day, that in Nottinghamshire alone 40,000 head of cattle perished in six months, and in Cheshire upwards of 30,000 in the same space of time.

Its introduction here has been pretty generally attributed to the importation of two diseased calves from Holland, by a farmer at Poplar; a circumstance which should put us on the alert, seeing that week by week we are now importing upon an average upwards of sixteen hundred head of foreign cattle, and that many of them are coming direct from the infected districts. It has also been ascertained that the malady had been prevailing for two to three years in Denmark, Holland, and Germany, prior to its appearance here; a parallel of which we have in its present existence in Konigsburgh, Mecklenburgh, and other Prussian States. Upon its out-

break Parliament quickly passed a special act to stay its ravages, empowering the King in Council to issue such orders as were deemed to be the most efficient for the purpose. Instructions were thereupon issued, 1st, for the killing of all the infected animals, and burying them entire with the skins on, "slashed from head to tail," that they might not be used for the purpose of the manufacturer.

2d. For the burning of all the hay and straw used about the animals.

3d. For the cleaning and fumigating the sheds, &c., and for no sound cattle to be put in them for two months after the removal of the diseased.

4th. For no *recovered* animal to be allowed to go near others for a month after its convalescence.

5th. For no diseased cattle to be driven to fairs or markets, nor for the flesh to be used as food for dogs, &c.

6th. For no *healthy* cattle to be removed from a farm where the disease had prevailed in less than a month after its disappearance.

And lastly, orders were given for the notice of an outbreak to be immediately sent by the farmers to the constables, churchwardens, overseers, or special inspectors appointed by the magistrates, acting for their respective parishes.

The Government also undertook to pay forty shillings for every ox, bull, or cow which was killed, and ten shillings for every calf, with a corresponding allowance for their skins.

Under this arrangement it is recorded that the Treasury paid in the first five years no less a sum than £100,000, and that during the third year of the plague 80,000 cattle were destroyed, and nearly double that number died; while in the following year upwards of 7000 a month were killed under the order in Council.

The continuance of the disease, notwithstanding the adoption of these measures, led to many subsequent orders in Council to be issued, to meet the emergency.

In the *third* order, we find that *no* cattle, fat or lean, would be suffered to pass the Humber and the Trent northward, from its date, namely, January 19th, 1747, to the 27th of the

following March. Thus it was hoped that by interfering with even the little intercommunication which existed in those days, between one part of the country and another, a limit would be put to the extension of the disease.

With such facts before us, together with the greatly increased value of cattle *individually*, it is not a little remarkable that the authorities of the present day should have taken so few means of preventing the introduction of this destructive pest. Is it in this question, as in many others, that official routine and divided responsibility have to be satisfied before any real precautions are taken to save to the country so much wealth and to the people so much food as must necessarily be lost if the disease be introduced? Must this matter be first bandied about from the Board of Trade to that of the Customs, or from the Board of Health to the Treasury? Let us understand to what particular department it especially belongs, and then let the agricultural community unite with others in demanding from that division of the State the adoption of prompt and well-considered prophylactic measures.

A more vigorous inspection by the veterinary surgeons appointed by the Customs is imperatively needed, and may do something towards the accomplishment of the desired object; but if experience should show that this malady lies dormant for a time in the system, then, as was the case with sheep affected with small-pox, cattle may be imported bringing the disease with them and still escape the most careful scrutiny of the inspectors.

What we principally require at the outset is an investigation into the pathology of the affection and the laws that govern its extension, of which it may be admitted that as yet in this country we are practically ignorant; a fact which renders such inquiry the more imperative.

The medical profession appears to be agitating the question chiefly on the principle that diseased meat will find its way to the market, and thus prove injurious to man.* We, however, believe that such will be the condition of the carcasses

* See extract from the 'Lancet,' p. 212 et seq.

of animals, even if killed in the early stage of the malady, that no fear need be entertained of their being used for food. Speedy decomposition must follow, and, indeed, in many of the cases it will be found to have begun even while the animal survives. With the general question of the flesh of cattle being used for food when the animal had suffered from pleuro-pneumonia and other diseases we have at present little to do; but it is well known that for years past hundreds of such cattle have been sent to the dead-meat markets, and no one single proof has been given of its *direct injurious* effects.

We hold that the efficacy of the cooking process, if *perfect*, is a sufficient security against absolute injury, although it may be that such food is comparatively very deficient in the elements of nutrition. The temperature to which meat is exposed in the act of either boiling or roasting, by coagulating the albuminous matters, thus destroys the ferment which excites decomposition; to say nothing of the anti-septic properties of the gastric juice after such food has entered the stomach. But, besides this, even in those diseases in which reproductive cells are the special organisms which produce the extension of a malady, their powers of propagation are destroyed by the same processes, of which we have a parallel example in cooked "measled pork."

The medical profession, acting in conjunction with our own may be of essential service in this matter; but we cannot imagine a less efficient means of accomplishing the desired end than that which it appears is about to be taken by the Board of Health, namely, the appointment of members of a profession who have never made the study of the diseases of the lower animals an integral part of their education, to report upon the nature and consequences of this and other epizootics. If the Board of Health, as a sectional division of the Government, feels that the application of sanitary measures to cattle and sheep are imperatively needed, and we are far from denying the necessity of this, then let it seek to nominate persons who are qualified by their special education and pursuits for the task, and none are so much so as the members of the veterinary profession.

CATTLE SHOW IN FRANCE.

THE French Commissioner calls the attention of the Editors to the prize list of the Fat Cattle Show of Paris, held at Poissy. Knowing their endeavours to take advantage of every occasion which can afford an increase in the prosperity of the English agriculturists, he is confident they will give their co-operation in promoting the views intended by the French Government, viz., to extend the relationship existing between the French and English agriculturists, by calling the attention of their readers to the importance of the English breeders or feeders entering into the competition, and show to France the wonderful animals they can produce.

We have pleasure in complying with the request of the French Commissioner by inserting the following particulars :

International Cattle Show in France, for Fat Stock, to be held at Poissy (Cattle Market of Paris, on the Rouen and Havre to Paris Railway, ten miles from Paris), on the 6th, 7th, and 8th of April, 1857. The following classes, applicable to Great Britain and Ireland, are extracted from the Programme of the Premiums offered by the French Government.

PRIZES—CATTLE.

SHORT HORNS.—*Class 1.*—Short-horned steers, not exceeding three years old. 1st prize, 60*l.* ; 2d, 48*l.* ; 3d, 40*l.*

Class 2.—Short-horned steers or oxen, above three years old. 1st prize, 48*l.* ; 2d, 40*l.* ; 3d, 36*l.*

DEVONS.—*Class 3.*—Devon steers, not exceeding three years old. 1st prize, 60*l.* ; 2d, 48*l.* ; 3d, 40*l.*

Class 4.—Devon steers or oxen, above three years old. 1st prize, 48*l.* ; 2d, 40*l.* ; 3d, 36*l.*

HEREFORDS.—*Class 5.*—Hereford steers, not exceeding three years old. 1st prize, 60*l.* ; 2d, 48*l.* ; 3d, 40*l.*

Class 6.—Hereford steers or oxen, above three years old. 1st prize, 48*l.* ; 2d, 40*l.* ; 3d, 36*l.*

POLLED BREEDS.—*Class 7.*—Polled steers, not exceeding three years old. 1st prize, 60*l.* ; 2d, 48*l.* ; 3d, 40*l.*

Class 8.—Polled steers or oxen, above three years old. 1st prize, 48*l.*; 2d, 40*l.*; 3d, 36*l.*

HIGHLAND BREED.—*Class 9.*—Highland oxen, not exceeding four years old. 1st prize, 48*l.*; 2d, 40*l.*; 3d, 36*l.*

Class 10.—Highland oxen, above four years old. 1st prize, 32*l.*; 2d, 28*l.*; 3d, 24*l.*

KERRY BREED.—*Class 11.*—Steers or oxen of any age. 1st prize, 36*l.*; 2d, 32*l.*; 3d, 24*l.*

CROSS OR MIXED BREEDS.—*Class 12.*—Cross or mixed bred steers, not exceeding three years old. 1st prize, 36*l.*; 2d, 32*l.*; 3d, 28*l.*

Class 13.—Cross or mixed bred steers or oxen, above three years old. 1st prize, 32*l.*; 2d, 28*l.*; 3d, 24*l.*

SHEEP.

LEICESTER BREED.—*Class 14.*—Pens of five fat wethers, one year old. 1st prize, 40*l.*; 2d, 32*l.*; 3d, 28*l.*

LONG WOOLLED BREEDS (not being Leicesters).—*Class 15.*—Pens of five fat wethers, 1 year old. 1st prize, 40*l.*; 2d, 32*l.*; 3d, 28*l.*

SOUTH DOWN BREED.—*Class 16.*—Pens of five fat wethers, one year old. 1st prize, 40*l.*; 2d, 32*l.*; 3d, 28*l.*

CHEVIOT BREED.—*Class 17.*—Pens of five fat wethers, two years old (under three shear). 1st prize, 24*l.*; 2d, 20*l.*; 3d, 16*l.*

BLACK FACED BREED.—*Class 18.*—Pens of five fat wethers, three years old (under four shear). 1st prize, 24*l.*; 2d, 20*l.*; 3d, 16*l.*

CROSSES.—*Class 19.*—Pens of five fat wethers, one year old. 1st prize, 24*l.*; 2d, 20*l.*; 3d, 16*l.*

MEDALS.

In addition to the money premiums, gold medals will be given with first prizes, silver medals with second prizes, and bronze medals with all the others. An extra prize, consisting of a silver cup of the intrinsic value of 100*l.*, will be awarded to the best fat ox in any class of the English, Scotch, and Irish breed. A cup of the value of 48*l.* will be awarded to the best pen of fat sheep exhibited. Similar extra prizes are offered for the French animals exhibited.

GENERAL REGULATIONS.

Sheep must be sheared, one small lock being left behind the left shoulder.

CERTIFICATE OF ENTRY.—Declarations of entry must be made on or before the 15th March, 1857. The certificates must contain the name and address of exhibitor, with the kind, class, breed, and age of the animal. The age of all animals must be calculated up to the 15th March, 1857.

The certificates must be sent to the Minister of Agriculture and Commerce, No. 78 bis, Rue de Varennes, Paris, so as to reach the Ministry on or before the 15th March, 1857.

ARRIVAL OF STOCK.—All animals intended to be exhibited at the show can arrive at the yard during the day of Saturday, the 4th April: they must be at their place on Monday, 6th April, before seven o'clock in the morning. None can be admitted after that hour.

KEEP OF STOCK.—The French Government will pay the cost of transport within their own frontier, and will provide for the keep of stock during the exhibition.

Application for certificates to be made to the Minister of Agriculture, at Paris.

Parliamentary Intelligence.

HOUSE OF COMMONS, THURSDAY, FEB. 26.

DISEASE AMONG CATTLE.

Mr. Stafford asked whether the attention of the Government had been called to the epidemic disease among cattle in Central Europe, and whether the Board of Control had taken any measures to prevent the landing of diseased cattle in this country?

Mr. Lowe replied that the attention of the Board of Trade had been called to the subject, which had put itself in communication with the Foreign Office, requesting that department to obtain from consuls abroad all the information possible on the subject. The Board of Trade had likewise put itself in communication with the Customs, which department possessed an Act of Parliament under which it had powers sufficient to prevent the importation of infected animals. As

an instance that the officers of that department were not wanting in diligence, he could inform the House that on a calf on board the *Concordia*, from Rotterdam, exhibiting symptoms of murrain, they had the animal killed. Investigation then confirmed the suspicion that the animal was infected, and the body was accordingly destroyed. The remainder of the cargo was examined and found free from disease.

Mr. Stafford gave notice that to-morrow, on the motion that the House, at its rising, do adjourn till Monday, he should call the serious attention of the House to this question of disease among foreign cattle.

HOUSE OF LORDS, FRIDAY, FEB. 27.

THE CATTLE DISEASE.

In reply to *Lord Polworth*,

Lord Stanley of Alderley said, the Government had received no additional information of the existence of this disease, but the Custom House officers had power by law to destroy foreign cattle supposed to be affected with any contagious disease. The Government would direct communications to be made to our consuls at foreign ports requesting them to send any information they could obtain, and the Custom House officers, having their attention called to the existence of the disease, would watch narrowly all cattle imported from abroad.

HOUSE OF COMMONS, FRIDAY, FEB. 27.

THE MURRAIN IN CATTLE.

Mr. Stafford said that the answer given to him by the right honorable gentleman the Vice-President of the Board of Trade last evening had filled him and other honorable members with dismay. The right honorable gentleman had said that the Board of Customs had displayed extraordinary sagacity by the destruction of one calf; but it was a subject for alarm that the remainder of the cargo, of which this calf was one, had been allowed to be landed; and it was probable that they might have been infected by it. Would the right honorable gentleman state whether the Board of Customs or any other department of the Government had made arrangements for preventing the entrance into this country of one

of the most tremendous scourges which could affect a thickly populated land like ours?

Mr. Lowe said that, in the absence of notice of the honorable gentleman's intention to put this question, he could only say that the Board of Trade had put themselves in communication with the Foreign Office in order to obtain from our consuls all possible information on this subject, and had also communicated with the Board of Customs, from which they had received assurances that they were perfectly awake to the danger which threatened the cattle of this country. As a proof of that, they had stopped one animal and had had it killed on suspicion of its being affected with this disease.

Lord Naas thought that the answer of the right honorable gentleman was most unsatisfactory. In 1744, this murrain was introduced into England by two calves from Holland, and the consequence was the destruction of 40,000 head of cattle in Nottinghamshire and Leicestershire, and almost as many in Cheshire. The disease raged with scarcely any intermission for eight years, and visited nearly every part of the grazing districts of England. The disease was of a most contagious character. It had been known to be carried in the clothes of persons who attended upon the cattle, and there had never been a case in which contact had occurred without the disease being communicated. The permitting a cargo of cattle to land, one of which was affected with this disorder, must have resulted from the grossest ignorance, or from want of instructions on the part of the officials. The practice of every State in Europe was at once to prohibit the importation of cattle from countries where disease had broken out, and all who had studied the subject were of opinion that it was the duty of our Government to adopt the same system. He sincerely hoped, therefore, that measures would be taken without delay to prevent the extension of this dreadful scourge.

Mr. Packe said this was a subject which concerned every consumer of meat in this country as well as the graziers and breeders of cattle, and the answers given on that evening and the evening before by the Vice-President of the Board of Trade were most unsatisfactory. Since live cattle had been admitted duty free under Sir R. Peel's measures there had been a very considerable increase in the fatal diseases to which cattle were liable, and the agricultural interest had been extremely patient under the losses to which it was thereby exposed. They knew that a shipload of diseased cattle had been dispersed over the country, causing great

danger of contagion. Cattle bought at fairs sometimes did not show symptoms of the complaint till two or three weeks after they had caught the infection; and the most ruinous losses must ensue to the graziers if a check were not put immediately upon importation. He therefore entreated the noble lord at the head of the Government to take this urgent matter into serious consideration.

Sir J. Tyrell said that attention had been called to this subject for many years by the Royal Agricultural Society; but in their report on the lungs complaint that body had come to the conclusion that, unfortunately, nobody knew anything about it. A few years ago smallpox spread extensively among the sheep in this country, the disease having, no doubt, been the result of foreign importation; but it afterwards suddenly disappeared in apparently the most miraculous manner. The right honorable gentleman (*Mr. Lowe*) said he had destroyed one calf affected with the disease, so that his experience in the matter was plainly very limited.

Lord Palmerston promised that inquiry should be made by the Government, with a view to the adoption of whatever precautions were practicable to prevent the spread of disease among cattle.

Veterinary Jurisprudence.

RUBBINS, *v.* THE GREAT NORTHERN RAILWAY COMPANY.

CLAIM £50, for alleged injury (resulting in death) to a valuable horse during its transit from Newark to Tallington in one of the Company's horse-boxes. *Mr. Phillips* appeared for the plaintiff; *Mr. Bell*, barrister, with *Mr. Justins*, appeared for the Great Northern Railway Company. The case was fully gone into at the November Court, and the evidence given on that occasion was, with a few additions, precisely the same as that given on this occasion. A verdict was returned in favour of the plaintiff at the November Court for the full amount claimed, and in December application was made by *Mr. Bell* for a new trial, which was granted. The following were sworn on the jury: Messrs. *G. Baker*, *T. B. Monck*, *W. Richardson*, *T. K. Parker*, and *D. E. Simpson*.

Mr. Phillips stated the case to the jury, and called upon them to carefully listen to the evidence he should produce, feeling convinced that they would consider it sufficient to warrant them in returning a verdict for the plaintiff. He contended that the injury to the horse must have resulted from some negligence or default on the part of the Company, and that it was ridiculous to suppose that the injury could be inflicted by the horse striking its head against a flat surface, for such a blow would cause a contused wound.

The evidence was then taken, the facts of which were as follows: On the 18th of June, *Mr. Edward Rubbins*, of Baston, near Market Deeping, purchased a black-brown horse of *Mr. Edward Gething*, horse-dealer, of Hawton, near Newark, for £70, and on the 21st it was sent by railway from Newark to Tallington.

William Hercock, groom to *Mr. Gething*, rode the animal from Hawton to Newark, and bore testimony to the sound state of the animal when he delivered it to *John Wilkinson*, a stable-keeper in *Mr. Gething's* employ at Newark.

Wilkinson wiped down the horse before it was put into the box, and also combed the lock just above the forehead: he did not observe there was anything the matter with the animal.

Mr. George Brewster, of Staunton Grange, Notts, saw the horse *Hercock* was riding, and looked at it particularly: he also did not notice any injury on the forehead.

Henry Wagner, foreman porter to the Great Northern Railway Company at Newark, received the horse from *Wilkinson* to go by the three o'clock train, and he led him into the box: the animal was perfectly quiet, and he was certain that no accident occurred in getting it in. He put the slip over its head, but he did not observe that its forehead was injured. The box in which the horse in question was put had come from Leeds; and, as is customary, it was carefully examined before the animal was put into it.

Henry Conington, groom to *Mr. Rubbins*, went to Tallington on the 21st of June, for two horses belonging to his master, which had been sent in separate boxes. Whilst taking the black-brown horse out, *Joyce*, a railway porter, directed his attention to some spots of blood on the padding under the horse's head; and when the animal was brought out of the box *Conington* observed a wound on the forehead, and from it a small portion of blood was issuing.

Mr. Jesse Eastwood, who was clerk in charge at Tallington at that time, with the porter, examined the box, and beat the

padding, but could find nothing to cause an injury. The plaintiff on the Monday following also examined the padding with no better success. The horse-box was, on the 18th of July, again examined at King's Cross, and the padding was taken to pieces bit by bit, but still nothing could be found that could in any way inflict the injury complained of. Henry Conington took both horses away, and on the road he observed that blood still issued from the wound on the forehead of the black-brown horse. When he got to Baston he directed his employer's attention to the injury; and Mr. Holmes, veterinary surgeon, of Bourn, was sent for. Upon examining the animal, Mr. Holmes discovered that the wound was freshly done, but it was not bleeding when he saw it. He ascertained upon probing the wound, that it went direct to the frontal bone, then upwards for two inches. It was not a contused, but a punctured wound. Mr. Holmes treated it, and it went on well for several days; but upon seeing the horse a second time, he remarked, that he feared it would be "fatal:" his opinion was verified in the course of two or three days. It was ascertained upon opening the head of the horse, that the wound commenced two or three inches above the forelock, extending to the frontal bone, a portion of which was "chipped" off about the size of a sixpence, and the pericranium was much lacerated; death resulted from inflammation of the membranes of the brain, caused by the wound in question.

The principal additional evidence was that of *Mr. Gelling*, who deposed to selling the horse to plaintiff for £70, and he gave a warranty that the animal was sound. He saw it three or four days before the 21st, and was certain it was then all right.

Professor Spooner, principal of the Veterinary College in London, said he had listened to the evidence given by Mr. Holmes, and he was quite certain that it was impossible for such a wound as described by that gentleman to have been inflicted by the horse knocking its head against a flat surface. Judging from the wound, he must give it as his opinion that it was inflicted by some sharp, unyielding metallic instrument, and that the horse must have been jerked with considerable violence against the opposing body. He was certain that the injury proceeded from some instrument directly in front of the animal. The instrument that caused a punctured wound would not be likely to inflict much laceration at that part, the skin being thick and tensely adherent to the bone below. The hæmorrhage would not be great in consequence of the tense nature of the skin and the absence of any large blood-

vessels, and he should say that not many drops of blood would issue from such a wound. The bleeding being fresh when the horse arrived at Tallington, he was of opinion that the injury had been recently inflicted. He could not think that it was an old wound broken out afresh.

This concluded the case for the plaintiff; and

Mr. Bell, at some length, addressed the jury for the defence, contending that there was not the slightest tittle of evidence to prove any default or negligence on the part of the Company. The box in which the horse was conveyed from Newark to Tallington had been examined both by the Company's servants and the plaintiff himself, and nothing was found that could in any way inflict the injury complained of. He argued that the wound was, in all probability, one of long standing, and the oscillation of the carriage had caused it to break out afresh. The learned gentleman, after commenting upon the evidence given by Professor Spooner, called upon the jury to give a verdict for the Company.

After the evidence of two guards (who accompanied the train of which the horse-box formed part), Thomas Joyce and Jesse Eastwood, had been taken, *Mr. Bell* was again about to address the jury, but his Honour told him that such a course would be irregular.

The learned gentleman then requested his Honour to put the three following questions to the jury in his summing up: Was the carriage in which the horse was put a fit and proper carriage? Was the horse put into that carriage properly by the Company's servant? Was there any default on the part of the Company or their servants, and, if so, in what respect?

Mr. Phillips having replied,

His Honour impartially summed up the evidence, requesting the jury to take no notice whatever of the position of the respective parties, but to conscientiously discharge their duty. They had been told that the case had before been decided in that court, but he thought no enlightened jury could allow for a moment that decision to influence them in giving their verdict. This action was brought to recover damages for an alleged injury to a valuable horse during its transit from Newark to Tallington, and the question for them to consider was, did the animal sustain the injury whilst in the carriage? If they came to that conclusion, of course they must give a verdict for the plaintiff; but if, on the contrary, they thought the wound was inflicted before the animal came under the Company's care, they must return a verdict for the defendants. They had had the evidence of a very eminent professor in the veterinary art, and it was his opinion that the

wound had been inflicted by an instrument directly in front of the animal, and they had also other evidence which went a great way to prove that the animal was put into the carriage in a sound state. In shunting the carriages at Tallington, it was very probable that a violent concussion of two opposing bodies might have caused the horse to be thrown forward, and the injury thereby inflicted. He should submit the three questions put to him by his learned friend for their consideration, but the question that overruled all others was, where did the horse receive the injury?

After a few other remarks from his Honour, the jury retired, and after an absence of some time, returned into court with a verdict for the plaintiff.

MISCELLANEA.

ARRIVAL OF "MASTER BUTTERFLY" IN AUSTRALIA.

THE famous bull Master Butterfly, bred by Colonel Towneley, of Towneley Park, winner of the first prize at Chelmsford, in July last, Paris, and other Shows, which it will be remembered was purchased by Mr. Strafford for an agent of Mr. Ware's, Camperdown, Australia, at the unprecedented sum of 1200 guineas, reached Geelong in safety early in November last. His condition on landing reflected the highest credit upon the care and attention Captain Godfrey, of the Copenhagen, had bestowed on his interesting charge. We also learn that Mr. Ware is much pleased with his purchase. He had generously allowed the animal to be shown in Geelong for the benefit of the Anglo-society, and to use the words of our informant, "every one who could spare a shilling had done so to have a peep at this far-famed animal." We are the more gratified to make this arrival known, as it corrects a rumour as to the bull's being lost shortly after his shipment. The other stock which accompanied him also arrived out in safety; and we trust these enterprising colonists may reap the reward of their spirited exertions to improve the breed of cattle and sheep in those far-distant lands

AGE OF ANIMALS.

A BEAR rarely exceeds 20 years; a dog lives 20 years; a wolf 20; a fox 14 or 16; lions are long-lived. Pompey lived to the age of 70. The average of cats is 14 years; a squirrel and hare 7 or 8 years; rabbits 7. Elephants have been known to live to the great age of 400 years. When Alexander the Great had conquered one Porus, King of India, he took a great elephant which had fought very valiantly for the king, named him Ajax, and dedicated him to the sun, and let him go with this inscription—"Alexander, the son of Jupiter, had dedicated Ajax to the Sun." This elephant was found 354 years after. Pigs have been known to live to the age of 30 years; the rhinoceros to 20. A horse has been known to live to the age of 62, but averages 20 to 25. Camels sometimes live to the age of 100. Stags are long-lived. Sheep seldom exceed the age of 10. Cows live about 15 years; Cuvier considers it probable that whales sometimes live to the age of 1000. The dolphin and porpoise attain the age of 30. An eagle died at Vienna at the age of 104 years. Ravens have frequently reached the age of 100. Swans have been known to live 360 years. Mr. Mallerton has the skeleton of a swan that attained the age of 290 years. Pelicans are long-lived. A tortoise has been known to live to the age of 107.

WELL DONE, BROTHER JONATHAN.

THE *Southern Planter* says: A few days ago we met a gentleman from Alabama, who gave us a piece of information in regard to ascertaining the age of a horse, after he or she has passed the ninth year, which was new to us, and will be, we are sure, to most of our readers. It is this: after the horse is nine years old, a wrinkle comes on the eyelid at the upper corner of the lower lid, and every year thereafter he has one well-defined wrinkle for each year of his age over nine. If, for instance, a horse has three wrinkles, he is twelve; if four, he is thirteen. Add the number of wrinkles to nine, and you will always get it. So says the gentleman; and he is confident it will never fail. As a good many people have horses over nine, it is easily tried. If true, the horse-dentist must give up his trade.

FOOD OF THE CHINESE.

"THE Chinese have no prejudice whatever as regards food; they eat anything and everything from which they can derive nutrition. Dogs, especially puppies, are habitually sold for food; and I have seen in the butchers' shops large dogs skinned, and hanging with their viscera, by the side of pigs and goats. Even to rats and mice the Chinese have no objection—neither to the flesh of monkeys and snakes; the sea slug is an aristocratical and costly delicacy, which is never wanting, any more than the edible birds' nests, at a feast where honour is intended to be done to the guests. Unhatched ducks and chickens are a favorite dish. Nor do the early stages of putrefaction create any disgust; rotten eggs are by no means condemned to perdition; fish is the more acceptable when it has a strong fragrance and flavour to give more gusto to the rice.

"As the food the Chinese eat is for the most part hard, coarse, and of little cost, so their beverages are singularly economical. Drunkenness is a rare vice in China, and fermented spirits or strong drinks are seldom used. Tea may be said to be the national, the universal beverage; and though that employed by the multitude does not cost more than from 3d. to 6d. per lb., an infusion of less costly leaves is commonly employed, especially in localities remote from the tea districts. Both in eating and drinking the Chinese are temperate, and are satisfied with two daily meals—the 'morning rice' at about 10 a.m., and the 'evening rice' at 5 p.m. The only repugnance I have observed in China is to the use of milk—an extraordinary prejudice, especially considering the Tartar influences which have been long dominant in the land; but I never saw or heard of butter, cream, milk, or whey, being introduced at any native Chinese table.—*Sir J. Bowring.*

OBITUARY.

Died, on January 23d, at Kirkaldy, Robert Dods, M.R.C. V.S. Mr. Dods's diploma bears the date of May 12th, 1826.

ERRATA IN NO. 351.

Page 180, 4th line from the bottom, *for* J. Brown *read* J. Burr; and in the last line, *for* "permitted to resign his command," *read* commission.

THE
VETERINARIAN.

VOL. XXX,
No. 353.

MAY, 1857.

Fourth Series,
No. 29.

Communications and Cases.

THE USE OF GLANDERINE AND FARCINE IN
THE TREATMENT OF PULMONARY AND
OTHER DISEASES.

By JAMES J. G. WILKINSON, M.D.

THE employment of remedies derived from the animal kingdom, and from the products of animal disease, has been legitimated by vaccination; to which may now be added syphilization, as practised on a large scale in many capitals of Europe. It is my duty, in a very brief form, to bring to the notice of all who are interested in the science of healing, in public health, and in the eradication of incurable maladies, the employment which I have now made for some time of the morbid products of glanders and farcy, in the extinction of certain human diseases. It would be easy to write a book upon the subject; but it is more profitable in a new field, requiring the co-operation of many minds and experiences, to confine it to a short memoir.

Glanders, the malignant catarrh of the horse, and farcy, which is tertiary glanders, affecting the lymphatics and cellular tissue of the limbs and of the whole body, are diseases so deadly, that until of late years, the problem of the harmless administration of their virus was not likely to be solved. At present, however, by the simplest process, the means is at hand whereby any person can prepare these substances for himself, so that they shall preserve all their medicinal vigour, though they lose entirely the power of morbid inoculation.*

* As the inoculation of syphilis cures syphilis, why should not the inoculation of glanders from another horse, cure glanders? The experiment in
xxx. 33

In bronchitis, in all its stages, I have had considerable experience with the employment of glanderine; and I could easily detail cases from my note-books, if I had not proposed to myself limits of space which do not admit of such details. Suffice it to say, that I regard glanderine as little short of a specific, in the worst forms of bronchitis; especially in elderly persons, where suffocation from excessive secretion is imminent; in such cases, the patients themselves express the relief experienced as "magical." Here glanderine appears to supply a desideratum. For its action is rapid and satisfactory in those neglected cases which have smouldered perhaps for weeks in the bronchial flues before the practitioner is called in; and when he arrives, the patient, who then perchance for the first time takes to his bed, is in truth near his end. Let glanderine be employed under these circumstances, and the expectoration becomes freer; the fever less intense; strength recovers itself: in twenty-four hours the expectoration diminishes; the diminution of the sputa proceeds rapidly, and the strength advances with it: the mouth moistens, and the tongue cleans; and the patient is soon out of danger.

From my present experience of glanderine, I look back upon many fatal cases, which would probably have been saved by this surprising remedy.

There is another class of bronchial cases in which glanderine is attended with success: I mean those in which there is no present danger; but in which the disease has firmly established itself in the lungs, perhaps extensively, and requires many weeks to subdue; with a great probability that a bronchial asthma will be left behind. In these cases, glanderine will perform, in eight or ten days, the work of weeks of any other medicament, or course of medicaments, with which I am acquainted. It is my practice, where necessary, to alternate it with any other remedy, as aconite, ipecacuanha, or bryonia, which seems to be necessary, every two, three, or four hours.

In pneumonia I have not tried glanderine; but I shall do so with great confidence, especially where the rusty sputa are strongly characteristic. I do not know what may be its effects in dry coughs; but in the most obstinate cases of cough attended with expectoration, and which have been accustomed to commence at Christmas and last till June, its

this now incurable disease could at least do no harm. Or let it be tried with farcy upon glanders, and *vice versâ*. The first or second decimal dilution might be employed for the inoculation, with the certainty that that increased tension of the poison would produce a mitigated disease.

action has been decisive, and annihilative in a few hours of the disorder. It has speedily abated obstinate whooping-cough.

There appear to be certain bronchial cases to which glanderine is not applicable; those, namely, in which violent and fatiguing cough proceeds from real atony; where the pulse is slow; and where stimulants and tonics are indicated, and useful. In such cases, glanderine increases the paroxysms; and from the rapidity of its aggravative action, the patients, of their own accord, cease to take their medicine. Although, however, it cannot be continued in these cases, I have found the rapidity of the benefit of the next remedy, apparently increased by the precedence of the glanderine. It is possible that if we were to stop here and give nothing else, the glanderine would go on acting, and conduct the case to a successful result.

In catarrh, as in bronchitis, and especially where the symptoms are grievous, and the nose inflamed with thick and tinged defluxion, where the tonsils are swollen and the fauces gorged, you will be surprised by the rapidly specific action of glanderine. If the nose and mouth are ulcerated, so much the better for the energy of its characteristic action.

In terrible cases of scarlatina, where the odour of the breath is putrid, and the buccal passages are filled with tenacious lymph and mucus, while the swollen tonsils close the posterior channels, this remedy alone, from its wonderful promptitude, seems capable of rescuing the patient. I have tried it in none such; but that it would not disappoint experiment, is a fair deduction from what it *can* do. Recently, it saved a little patient apparently suffocating from diphtherite in the mouth and nose, and agonized with buccal ulcerations: in twelve hours the morbid secretion had ceased and disappeared; the superficial ulcerations had vanished; and none of these symptoms reappeared.

It has been tried in putrid fever with the most marked and rapid success: indeed, I should say that putrescence, destructive or quasi-malignant ulceration, and tendency to decomposition of the tissues, are among prime indications for its employment. It is well worth a trial in carbuncle and plague.

I have given it in one case of ozæna with marked success: and should confidently rely upon it in malignant erisypelas, particularly if attended with large formations of pus, and destruction of parts. In malignant pustule, which nearly resembles the disease that inoculated glanders produces in the human subject, I believe it would be specific. In pyæma, and

inflammation of the veins and lymphatics, particularly where matter is formed, or forming, farcine would no doubt prove homœopathic, *i. e.*, curative to the symptoms.

In the more violent or rapid cases, I would recommend the glanderine, or farcine, to be as recent as possible.

In malignant external ulcerations, I have used a lotion prepared by dissolving one two grain pellet of glanderine in half a tumblerful of water. Try the remedy thus in old bad legs, and in putrid bed-sores. It also deserves experiment in obstinate syphilitic sores attended with great fetor; it will probably abate the malignancy of the inflammation, even if it cannot, from specific causes, work a deeper effect.

It is a fair deduction also, that glanderine is a first-class remedy in confluent smallpox, or it might be given in alternation with farcine.

I have made no trials of it in skin-diseases; but shall assuredly do so wherever malignancy and phagedæna are prominent characteristics. It is promising in pustular ring-worm.

I have cured one case of anasarca of the lower limbs with farcine. This remedy, judging by the analogous effects in the horse, will probably apply with efficacy to uterine phlebitis. It is worth thinking of also in psoas and lumbar abscess.

Let the veterinarian try it in the lung-disease, and murrain, of cattle.

A most interesting problem occurs: What will glanderine do for phthisis? I can only answer that, in my experience, it has stormed the outworks of phthisis; but whether it will carry the citadel remains to be proved. It diminishes the expectoration; abates the constantly recurring aggravations of inflammation; and checks the liability to catarrhal affections, which excite the tuberculous diathesis from without; but whether or no it will operate upon tubercle, I cannot say. In time, it is my intention to lay this matter in detail before the world; but at present a sufficient time has not elapsed to test the trueness of the remedy. Meanwhile I commit the experiment also to all humane persons, and institutions for the consumptive. The glanderine can be given in alternate doses with iron, or other remedies: being an animal substance, it will be singularly little interfered with by other drugs, provided three, four, or six hours intervene between the administration of the two substances.

The use of glanders suggests also the use of all the other animal poisons. These indeed may be regarded as malignant or medicinal growths upon the fields of morbid animal na-

ture, corresponding to the nefarious plants, aconites, upases, deadly nightshades, which grow upon the soil. We shall have to enter this field; for the very malignity of the poisons shows the energy with which they will work for us when they are duly broken in. I shall now conclude by showing how safely all these poisons may be employed; and that they may be at the disposal not merely of the few, but of every one who will take the care and trouble of preparing them. For the cost of a few shillings, a whole county may receive the benefit of these remedies for a twelvemonth; and any humane person, medical, clerical, or common, may have the Christian privilege of dispensing them.

The following theory has sketched itself out for me relative to the action of glanders, which, to save words, I state affirmatively.

The poison is actively centrifugal, and tends to abolish the centres of vitality by powerful ejection of their minutest contents: the spaces being filled up with matter, the result of malignant or destructive inflammation. It is the type of vital destructions; and begins its ravages in the nose of the horse, because that is the spot where it can most easily explode its first seeds of disease: it wants space for throwing off and sowing its poison. It is good in all malignant ulceration and excessive expectoration. And its general curative indication is, wherever extrusion of contents overbalances supply of nutrition. It is the opposite to *arsenic*, which corrodes by stopping function, and isolating parts; this over-energizes, explodes, and scatters the grains of living organisms.

Farcy is the same thing in parts where expulsion cannot go on; in which case destruction and retention of the destroyed parts have place. The lymphatic system is attacked, because it is the nutrient or supplying system, and it is affected by reaction. Glanders is the direct action; farcy the inverse.

Now to obviate the objection of danger, as well as to disseminate and laicize the remedy, I will state the mode of preparation; premising that I have taken glanderine myself for obstinate catarrh, and with only beneficial results.

By the aid of an experienced veterinary surgeon (I have enjoyed the invaluable kindness in this respect of Professor Spooner, principal of the Veterinary College), procure in small one-drachm bottles the matter from the nose, and from the lungs, of infected horses immediately after their destruction. The glanderine from the nose and from the lungs, and the farcine, should be of course in *separate* bottles.

And each medicament, for we will no longer call them poisons, should be prepared separately. Let us now follow the nose-glanderine as a model for the rest through the various stages of its preparation.

Put on a pair of kid gloves.

Weigh ten grains of the glanderine in glass scales: weigh in the same, ninety grains of thick gum mucilage. Rub the two together for twenty minutes, or until the amalgamation is complete. Then for the second time weigh ten grains of the new mixture; and throw away the rest. Let the mortar be carefully rinsed with large quantities of water at a sink where there is a ready outflow; and take heed to your eyes, or to any sore or cut surfaces, while you are engaged with the first dilutions of the glanderine. Rinse lastly with boiling water, and cool the mortar again at the tap. Observing this caution, now rub the second ten grains with another ninety grains of thick mucilage; and of this mixture preserve one fluid drachm, throwing away the rest; and rinsing the mortar again with the same care. Now take your measured drachm of the second dilution of glanderine, and in a two-ounce bottle, pour upon it nine drachms of distilled water. Cork the bottle, and put on the cork the figure 3, signifying the third dilution. Shake the bottle until its contents are thoroughly mixed. Into another two-ounce bottle now put one measured drachm of No. 3, and nine drachms of distilled water. Mark this No. 4, and shake it into admixture as before. Throw away the remaining nine drachms of No. 3. Then prepare No. 5, by a similar process to No. 4, and throw away the residue of No. 4. Perform all these operations neatly and gently, and mind your eyes in the mean time.

Now this is what you are to do with No. 5. Take an ounce of it *by weight*, and nine ounces of the best powdered gum arabic; mix them together in a mortar until the fluid is taken up, and the mass thoroughly amalgamated. That mass is your stock of harmless glanderine of the sixth dilution. By carrying the process with the distilled water onwards, you can of course make what further dilutions you please; but I have always made use of the sixth in my practice. Some of my brethren will probably enrich experience by the employment of the 200th.

Well, you have got your mass; and now all you have to do, is, to make it into small pills. I make up two grains into a pill. The whole mass should be pillulated at once; and the pilules received into a flat box with plenty of *sugar of milk* at the bottom, and freely moved about many times

for a few days to prevent them from sticking together. The medicine is now hermetically enclosed in the gum, and will preserve its virtues for months; perhaps for years.

How safe is its administration! The sixth attenuation contains in one grain but one millionth of a grain of the glanderine, and this millionth is extended through a million fold its own space. My habit is to dissolve one of these pilules in half a tumblerful of water; and to direct a teaspoonful to be taken every four or every six hours. Thus again the dilution and extension are multiplied twenty-fold. Or in round numbers, each teaspoonful contains the twenty millionth of a grain, one thousand million times extended. The tumbler ought to be kept in a cool place, because the water easily ferments in warm weather.

So much for dilution of virus: now for experience of safety. I have on many occasions applied the contents of the tumbler to raw surfaces; have thrown it up the nose in ozæna; and given it in aphthæ and buccal ulcerations; and with only beneficial results.

Glanderine is not a pleasant idea: but neither is vaccine: the healing use has however another idea concealed within it; and with this use alone the name of glanderine will soon be associated.

ON THE EXISTENCE OF OXALATE OF LIME IN THE URINE OF THE HORSE, AND BRIGHT'S DISEASE OF THE KIDNEY.

By J. WESTERN, M.R.C.V.S., Horse Artillery, Bangalore.

IN the '*Veterinarian*' for November 1856, which has only reached me within the last few days, there is a paper by Mr: John Gamgee, M.R.C.V.S., Professor of Anatomy and Physiology in the Edinburgh Veterinary College.

In this paper the names, opinions, or publications of no less than sixteen foreign professional gentlemen are alluded to, and quoted as authorities to be depended upon by his class; for in the first paragraph Mr. Gamgee says, "A journal appears quarterly in Stuttgart, often quoted by us, called *The Repertory of Veterinary Science*; it is now in its seventeenth year, and Professor Hering, with whom it originated, is still its editor. Its most remarkable feature is the vast and complete collection of all the original matter contained in the contemporary veterinary periodicals that are issued in six

different languages. The editor of such a journal must of necessity, at the close of each successive year, have a most accurate and comprehensive knowledge of the progress of veterinary science."

The comprehensive part of such an editor's knowledge I am willing to concede, but its accuracy must depend upon the strict veracity of the authors he reads in the six different languages.

Medical authors are not free from the very common error of quoting from the writings of others, without examining for themselves whether what they quote is true, and in this way innumerable errors are continued. In the present instance it is not my intention to assert that any of the gentlemen whose names are included in Mr. Gamgee's paper are in error in what they write, but this I do assert, that what one of them in particular states as the result of his observation is so directly opposed to my own, that it appears to me only due to Mr. Gamgee's class, that they should become acquainted with this contradiction, as it may induce them to examine into facts for themselves, *and trust to facts as they are found rather than to the opinions of others unsupported by facts.*

My attention to Mr. Gamgee's paper was particularly arrested by the announcement on the wrapper of the journal, "Analysis of Urine." I turned to page 662, where I found it stated, "Professor Fraas has made numerous observations and experiments on this subject, that have led him to draw the following conclusions, &c.: 'Oxalate of lime is rarely met with in fresh urine (horse's), but frequently when it is old, or in a morbid state, or decomposing.'"

This observation concerning the existence of oxalate of lime is exactly that with which I was impressed when quite a tyro in the use of the microscope; for some two years ago I failed constantly in finding crystals of this salt. A short time after that, however, I had a severe case of "oxaluria," when sometimes scarcely a crystal of any kind was visible except the oxalate. Since then I have strictly sought for this salt, for the sole purpose of deciding in my own mind whether or no it is to be considered a normal constituent of horse's urine when the animal is in perfect health, and *I am satisfied that it is so in India*, whatever may be the case elsewhere; for since the 1st of February, 1856, up to the 4th of January, 1857, I have a recorded history of the microscopic examinations of five hundred and twenty-five specimens of healthy urine, in which two hundred and eighty possessed the octohedral crystals of the oxalate of lime.

These examinations have been pursued in the most

methodical manner on horses in hospital for slight troubles not affecting their general health, such as rope-cuts, overreaches, trivial lamenesses, &c. An individual employed for the purpose of catching the first urine passed by the horse in the morning, before water had been given him, has been overlooked by the farrier on duty, and the vessel brought to me at the same hour daily, namely, 9 a.m.

By these examinations, I find that the average specific gravity of healthy urine is 1.030 and a fraction. With the exception of five cases, the reaction on litmus paper has been alkaline, and one neutral. In no case have I found the dumb-bell crystal of oxalate, although that form of carbonate is almost constant, for whenever the octohedral crystal of oxalate has been in abundance, accompanied by dumb-bells, these latter have invariably vanished on the application of acetic acid, leaving the former intact. The form of oxalate, too, is in some instances (and that not infrequently) compound, being double, triple, and even quadruple, as if two, three, or four crystals were superposed upon each other; while the fact of this not being the case, is easily demonstrated by a gentle sliding motion being given to the thin glass cover, by which the crystals may be made to roll over, and thus show their solidity.

The variation of the daily specific gravity is singular, and forms, I fear, one of the greatest obstacles to any benefit that might be otherwise looked for as assistance in diagnosis of disease; for without any change in food, watering, or exercise, I find the urine of the same horse one day giving a specific gravity of 1.015, also showing oxalate of lime, and the triple phosphates to be present, as well as the usual carbonates, and the next day, under exactly the same circumstances, it has been 1.050, with the same salts in equal abundance, and no other, and the same reaction on litmus paper.

Since the 4th of January, I have continued these observations on two horses daily, and this being the 15th of the month, I can record, of course, twenty-two more cases, in all of which, except one, oxalate of lime has been present, and in that one the urine had an acid reaction, and carbonate of lime only.

I see no reason why, if others will but put similar examinations to the test, that the fact, as I consider it, of oxalate of lime being a normal constituent of healthy horses' urine, should not be either established or refuted. If the former, which I do not doubt, *what becomes of the confidence hitherto placed in the other authors so abundantly quoted by Mr. Gamgee?*

Professor Fraas, in the same paper, is said to assert:

"In horses afflicted with Bright's disease of the kidney, said by Fraas to be very common, about six per cent. of albumen occurs in the urine, mostly in the shape of globules; the urine is then coloured red, and contains iron."

Now I should really feel deeply obliged to Professor Gamgee, or any of your readers, if they will kindly state whether they have ever seen "Bright's disease" in the horse, and what are the symptoms; for in the human subject it is so formidable an affliction, and so well marked generally, that after thirty years' practice I feel ashamed to find that what Professor Fraas says so frequently exists, I have entirely overlooked.

There appears to me, also, considerable obscurity in Professor Fraas' statement, that the albumen, in this disease, found in the urine is in the shape of globules. I have examined the urine of the human subject in a great many instances when the patient has been suffering under "Bright's disease" of kidney, but have never found globules of albumen, or indeed albumen at all, till separated by heat or acid, or both; and then not in globules, but in a pulpy or flaky mass. The colouring matter alluded to also by the Professor, is not a necessary consequence of "Bright's disease," although when the urine is red the colour is given by hæmotosine, the colouring matter of the blood, and that of course contains iron. Bloody urine is a very common disorder amongst horses in India, and I am by no means satisfied that the origin of the blood can be traced to its source. That it is blood is clear, for the corpuscles can be most distinctly seen by the microscope, and, as a matter of course, where blood is there also must be albumen; but this does not constitute Bright's disease; for in some instances the blood is seen to coagulate on the floor of the stall, and yet in a day or two the horse may be perfectly free from this morbid secretion—and that too very often without treatment. The native horse-dealers never attempt to stop it; for rather than consider it injurious, their opinion is that it is beneficial, and a sign of health. In this I by no means agree with them, although it is certain that the disorder may exist for an indefinite period without apparently producing mischief.

I have written this in the midst of so many avocations, that I trust your readers will overlook trifling errors; but the subject is one of interest, and, in my opinion, of serious consequence to the student of veterinary medicine.

What, may I ask, is the use of cramming the heads of pupils, or the pages of the *Veterinarian*, with quotations from authors of whom we know so little, unless some examination

has taken place as a guarantee that dependence is to be placed upon them?

So thoroughly satisfied am I that the oxalate of lime *generally* is to be found in the urine of the healthy horse before any decomposition of the fluid has taken place, that I shall never again see the name of Professor Fraas in connection with the veterinary profession without grave doubts creeping into my mind respecting the correctness of his opinions on such matters.

It is a well-known fact, that until Dr. Golding Bird drew the attention of the medical world to the frequent presence of oxalate of lime in human urine, very few persons would believe in its existence; but since the microscope has been brought to the present state of perfection, a drop of urine placed between two glass plates renders the fact undeniable if the salt be present. And as an instrument possessing eye pieces and objectives of the very best description, may now be had of Smith and Beck for £15, it is to be hoped that the day is not far distant when no member of the profession will be without one.

THE EASTERN CAMPAIGN.

By THOMAS WALTON MAYER, M.R.C.V.S., Royal Engineer
Field Equipment.

(*Continued from p. 188.*)

THE MURRAIN.

HAVING effected an arrangement by which a separation was made between the bullocks that appeared healthy, and those that might be suspected diseased, I proceeded carefully to examine the whole number, and withdrew about twenty, labouring under the following symptoms:—An uneasy and restless look about the eye, muzzle dry, grating of the teeth, staring coat, pulse slightly accelerated and wiry, respiration regular, appetite indifferent, fæces scanty, constipated, and covered thickly with mucus.

Before some of these animals could be removed to the portion of ground set apart for them, they were seized with trembling, and spasmodic twitchings of the muscles of the extremities, and then fell down, with head stretched out, as if

in the agonies of death. In this state, a copious alvine evacuation, of a thin, dirty gray colour, mingled with blood, and very offensive, took place. Then came reaction, with restored animation. Soon, however, this was succeeded by another attack (these attacks we subsequently found came on at certain periods), until nothing but blood was voided. The attacks frequently lasted at first only three or four hours, sometimes less, when death took place. On making a post-mortem examination of the bullock already dead, the following appearances presented themselves. On opening the abdomen, the first and second stomachs were found much distended with undigested food. The manyplus was firmly impacted with undigested matter, which was firm and dry. The abomasum was almost empty, containing only a dirty coloured liquid, similar to the evacuations, amongst which was a considerable quantity of blood. The whole of the villous membrane was in a high state of inflammation, which continued all along the small and large intestines, and these contained only a similar fluid, mixed with mucus and blood.

The liver was much engorged with blood, and the gall-bladder enormously distended with bile. The kidneys were healthy. The contents of the thorax do not call for any especial remark, the appearances being such as usually present themselves when an animal has died from exhaustion. The vessels of the brain were injected, and a small quantity of serum was effused into the third ventricle of the cerebrum.

It thus became evident, that the disease was one affecting the digestive organs, much gastric irritation and fever being present; that it rapidly assumed a dysenteric character, and was accompanied with great sensorial derangement. Subsequent experience enabled me to confirm this opinion. In many extreme cases vomiting took place, and the disease assumed the nearest approach to Asiatic cholera I have ever yet seen in animals.

And it is not a little singular that it should first have made its appearance in the same Asiatic localities, and to be pursuing its ravages in similar directions as that fearful disease did. After leaving Constantinople it proceeded in the direction of Varna and Schumla, thence by the Danubian provinces into Austria, and is now extending itself into Germany and Russia. This disease must not be confounded with pleuro-pneumonia, which still exists, committing great ravages on the Continent. They are totally distinct. But as every malady abroad, of so formidable a nature, is called murrain, there is some difficulty in separating the two.

There is another singularity attending the disease I am describing:—It does not agree exactly with the descriptions given of any former malignant murrain,* except in a few particulars; and it will prove a matter of some moment for us to inquire, what is the effect of climate or soil on epidemics in general? There was, however, with me, no time for investigations such as these, expecting, as we then did, every day to be ordered to the relief of Kars. The loss of our bullocks was a serious calamity, of which it was impossible to foresee the ultimate result. The camp was soon strewn with the dying and the dead. Unfortunately, our veterinary medicine chests were not provided for such an emergency, and some little delay took place before we could be supplied from Constantinople with the suitable remedies. In the mean time, an entire change of food was adopted. Bran was substituted for barley, and hay for chopped straw. The sick were also plentifully provided with flour-gruel, thickened with starch; and an infusion of mint, which was obtained abundantly from the forest of Belgrade, about four miles distant, was given to the amount of two pints daily. The only plan of treatment that appeared to me likely to be successful was, first of all to restore the suspended animation; secondly, to relieve the irritation arising from the inflamed state of the lining membrane of the alimentary canal; and thirdly, to re-establish the functions of the stomach and liver.

This was a matter of no small difficulty, for in many cases no time was allowed for any remedial agent to be administered before death took place, as was stated in the ‘Journal des Savans’ for 1682. The animals ate as usual, until they almost fell dead in a moment. It will not, however, interest your readers, if I enter upon this matter. I shall, therefore, in the next number, content myself with merely stating how the difficulties were overcome, and the treatment adopted that proved the most successful.

(To be continued.)

* See Youatt ‘On Cattle,’ pp. 384—6, “On the Malignant Epidemic Murrain of 1682 and 1714.”

MEMOIRS OF A VETERINARY SURGEON. THOUGHTS ON NASAL GLEET.

By MR. THOMAS GREAVES, M.R.C.V.S., Manchester.

IT is probably within the experience of most practitioners that nasal gleet is not always easily cured. Now and then cases come under our treatment which exceed the usual time ordinarily required for recovery by the majority of catarrhal attacks, and such occasionally degenerate into glanders.

It is not my attention in these pages to dwell upon the nature and treatment of common catarrhal affections; but to apply myself to the subject of maltreated or neglected catarrh, together with other causes of chronic nasal discharges. Neither am I about to lay claim to any new mode of treatment whereby a cure can always and with certainty be effected; but it having fallen to my lot to be more often engaged with these kind of cases than happens in the practice of the majority of veterinary surgeons, they have necessarily awakened in me much anxious thought and serious reflection; and having thus become familiarized with the varied phases of the disease, I have frequently experienced the gratification of witnessing many cases succumb to the treatment adopted by me.

In the year 1845, I was intrusted to carry out an investigation as to the cause of the diseased condition of the horses in one of the largest establishments in the kingdom. It had been the custom in this establishment to shoot sixteen or eighteen horses annually for glanders. This state of things had existed for a great number of years, and fresh cases kept continually presenting themselves for the same summary treatment. Many years anterior to the above date, the opinion and advice of the late Professor Coleman was taken, who came down into this neighbourhood, and, after an examination of the horses, condemned numbers of them to be shot. Still the disease was never eradicated.

In the year above alluded to, neither pains nor expenses were spared in completely cleansing, refitting, repaving, and reventilating all the stables. A most careful inspection was made of all the horses, and this frequently repeated; in fact, there was a careful scrutiny always going on. All the worst cases were at once destroyed, and every suspicious case removed far away from the rest. These latter were cases of

mild chronic glanders. Those destroyed had ulcers in their nostrils, and miliary tubercles in their lungs.

At one time I had no less than twenty-eight of these cases under treatment in this establishment, all having long-standing discharge from their nostrils. In some of them the discharge was very offensive : in others, there was no fetid smell at all. I trephined twenty-two out of the twenty-eight cases. Some were trephined twice, others three times, and several had four and five openings in their head at one time. Both the maxillary, malar, and frontal cavities were opened. I had ingeniously formed syringes made to enter these cavities, used various detergent and astringent lotions, applied blister after blister upon the forehead and under the jaws, inserted rowels, setons, &c., and gave all the known therapeutical remedies advocated for this disease for months and months. As it may be supposed, I had my hands full of cases of glanders, and my head full of rumours of glanders. Eighteen out of the twenty-eight cases recovered, and stood the test of many years' honest servitude afterwards without a recurrence of the complaint. The others died under treatment, or were destroyed, as some of them degenerated into acute glanders, or farcy, or showed other symptoms that proclaimed them to be highly dangerous and incurable. Some I treated with vegetable tonics, others with mineral tonics, and others again with the two combined. To some cases I gave cantharides, to others arsenic, administered either in powder in their food or in draught. I found that old horses could not endure the effects of the sulphate of copper for any length of time. The pituitary membranes became pale and tinged blue ; their legs would swell, the appetite fail, and they would sink under the treatment if persisted in. I found in some cases one cavity full of matter, in others another cavity which would escape the moment the plate of bone was removed. In some the pus was laudable and of a healthy consistence ; in others, thin, glairy, and glutinous in quality ; in others again it was in a curdy or cheesy state. In a few I found an entire absence of matter in every cavity ; but the membrane was considerably thickened having connecting bands of lymph, which, in some instances, had become organized. I found considerable difficulty in keeping down these spurious organizations. Fortunately, since that time the disease has not made its appearance in this establishment, except in one or two cases.

I have, however, had several similar cases from other establishments since then. One was a young strong cart-horse with a long-standing discharge from the off nostril that

was very offensive. I had him six months under treatment, during which time I trephined him fifteen times; but the discharge, which had nearly ceased when he left my place, increased after he had been at work for some time. As he was sent some distance from here, I could only occasionally hear of his progress. The discharge continued; and, after a year or two, he died glandered.

I once operated upon a small pony with a discharge from the off nostril, and found an abnormal growth within the frontal sinus, a polypus. This was removed, and the animal soon got completely well and continued so for years.

I also assisted a neighbouring veterinary surgeon to operate upon the frontal sinus of a blood horse, which had had a discharge from the off nostril for a long time. The bone had become so thin and soft, that by pressing on the outside one might have passed the finger through the bone. The cavity was full of matter, and the lining membrane thickened. This case did not prove successful.

I was requested by another veterinary surgeon to see a case of chronic nasal discharge he had under treatment. Much had been done, but all was of no avail. Careful examinations of the mouth were repeatedly made, but no diseased teeth could be discovered, although small portions of hay had been observed to pass from the nostrils along with the purulent discharge. He was destroyed, when it was found that his teeth were all sound, but there was a defective state of the palatine bone; a small aperture existed just at its junction with one of the furthestmost molar teeth. This small opening led to a winding track between the fangs of two of the teeth, and ultimately was traceable into the maxillary cavity.

Other cases I could enumerate, but it is unnecessary, I shall therefore proceed at once to record my observations respecting the *nature* and *treatment* of this disease.

NASAL GLEET

Is a term used to denote a protracted discharge from one or both nostrils. This affection may be dependent upon one of three causes, viz., fungoid growths in one or more of the cavities of the head; injuries to, and diseased facial bones or teeth; and, lastly, maltreated or neglected catarrh.

All writers have from time immemorial considered it desirable to divide and subdivide the affections that give rise to this discharge, and to class them under different heads, and very properly so, viz., into catarrh, influenza, nasal gleet, chronic glanders, subacute glanders, and acute glanders. But for my

purpose it is uncalled for, and I do not profess to know exactly how to draw the line of demarcation, as to where catarrh ends and nasal gleet begins, or where nasal gleet ends and glanders begins. I look upon them as one and the same disease, differing only in degree. It will be requisite, therefore, for me to clear away many considerations which would tend only to complicate and confuse, and this being done, the writer and the reader will the better understand each other.

Fungous growths, injuries, and diseased teeth, I consider *artificial* causes of nasal gleet; all other causes I consider *natural* causes.

ARTIFICIAL CAUSES OF NASAL GLEET.

There are many cases of nasal gleet which prove very troublesome and protracted; they have, however, characteristics which, if the case be attentively watched by the observant practitioner, will satisfy him as to the true seat and nature of the disease. There is an absence of tumified glands; the general health does not participate, unless mastication is interfered with, when the patient will necessarily fall away in condition. If it arises from a fungous growth, or diseased facial bones, it is painful to witness the degree of annoyance experienced by the animal. Sometimes he has a fit of snorting, which is continued for some time, when he will toss his head up frequently and impatiently, then rub his face against anything he can get at, always on one side; the discharge also is always from that side, and it is similar in character to other nasal discharges, only at times blood is observed to escape along with it, and it is always offensive. If there be a polypus, and it has existed for any length of time, it will acquire proportions which will interfere with the free ingress and egress of the air, and a snuffling or wheezing noise may be heard in the nostril. Should it exist high up, trephining and its extirpation constitute the only means of cure. If injured and diseased bone be the cause, it is not unfrequently the case that the exact spot may be indicated by its tenderness, or an indentation may be made from a softening of the bone at that particular place. In such cases, the first treatment, if it has existed long, should consist in the application of a blister over the part, and this to be repeated, at the same time placing the animal under a course of tonic medicines. Should this prove ineffectual, then trephining must be resorted to, since it may be that the internal plate of bone may be bulged inwardly, and splinters of bone project, which

it is absolutely necessary to remove before a cure can be effected. This being followed up with the application of dilute nitric acid, or a solution of alum, will often excite healthy action, and bring about a rapid cure. Should the discharge not subside, the use of tonics must be persevered in, so as to bring about a healthy state of the system generally.

When diseased teeth are the cause, it is then a really interesting case. To examine them accurately requires nice management and manipulation. It sometimes happens that we find the intervening spaces between the teeth unusually large, so that they are placed considerably apart, although they are perfectly sound and natural. A quantity of food becomes impacted in these spaces, and there it remains and undergoes decomposition, and in the process of time the tooth on either side becomes decayed, and thus hollowness of the teeth is the consequence. Occasionally a molar tooth is broken off, a small pebble being amongst the beans or other grain, and the cavity becomes packed full of masticated food, which in like manner gives rise to caries, and then portion after portion of the decayed tooth breaks off; the opposite or opposing tooth meeting with no attrition now encroaches in the same ratio as the decayed one recedes, and the diseased action continues to extend further and further until not only the head and body, but the fang of the tooth also is partially or wholly broken away, or so softened that the masticated food is forced through the decayed socket into the maxillary cavity, creating there inflammation and suppuration followed by a nasal discharge; for it must be remembered that the poor horse cannot use a tooth-pick! As soon as this state of things is ascertained, extraction of the remaining fang and a free rasping of the encroaching tooth, is the treatment indicated, and to be at once decided upon. Also soft food alone should be given for a few weeks, and then often all will do well.

I think I hear some one ask, But do you not augment the chances of the food finding its way into the maxillary cavity by extracting the remaining fangs, thus opening a wider passage into the cavity? Would it not be a much wiser plan to extract the lower opposing tooth, which had been acting like an hydraulic ram, forcing the food into this diseased cavity? It will at once be seen that this is a very plausible and an ingenious question, and it has a practical bearing, but it must be left to the discretion of the practitioner to answer. If a large syringe, having a long flexible pipe, be inserted up the cavity, and a quantity of warm water

be freely injected so as to wash out any decaying food in the maxillary cavity, we may hasten healthy action and consequently expedite a cure. I would also administer tonic medicines, and, if required, apply counter-irritants. Quidding is often found to be a very troublesome affection; it is, nevertheless, a most interesting subject, and one which is not properly understood, while it would amply repay the diligent investigator; but, as it does not come within my province here, I shall not now further allude to it.

My next paper I shall devote to the nature and treatment of nasal gleet arising from *natural* causes.

ON HIP-JOINT LAMENESS.

By F. J. SEWELL, M.R.C.V.S., London.

MR. GIBBON, V.S., writing in the last number of your valuable periodical, details a case of incurable hip-joint lameness, and inquires how we can correctly diagnose these cases or affections of the acetabulum joint. This kind of lameness is of greater frequency, at least in London, than is generally imagined. In working on the stones in town, there is more slipping and sliding about than is the case on roads; and consequently, with harness-horses in particular, more stress is thrown on the hind extremities, as they have more to do. All these cases may in general be traced to a fall, to being cast in the stable, or to some sudden wrench of the hinder limb, which from its violence causes an excessive strain on the ligament (*ligamentum teres*) of the acetabulum. The synovial membrane, and the other structures entering into the formation of the hip-joint, are thus most likely also injured; the consequence of which is, inflammation and more or less pain and lameness. As the inflammation progresses, ulceration and even caries of the joint gradually supervene; and these parts, which in a state of health do not exhibit any particular sensibility, when once they become the seat of inflammation, give rise to the most acute pain.

The symptoms which I have observed of hip-joint lameness are very striking, and cannot fail to indicate the seat of the affection. In the first place, there is the posture of the horse when standing: the affected limb is quite pendulous, as it were, from the quarter, resting only slightly on the toe, the weight of the body being supported entirely by the sound limb till the lameness is relieved; then the stifle joint is

always pointed or twisted outwards, the limb presenting very much the appearance of the cut in the October number of the *Veterinarian*, p. 562. In the second place, the action is very peculiar. In the walk or trot the quarter of the affected limb sinks or drops at every step; the horse goes lightly on the toe, and is incapable of getting the leg forward, and when forced to trot, he frequently carries the limb, and goes on three legs from excessive pain. So that the most prominent symptoms are great pain, the pendulous appearance of the limb, the turning outwards of the stifle joint when standing, and the depression of the quarter in action, all of which continue more or less during the progress of the lameness. There is in general little or no swelling, and nothing particular to be perceived in the appearance of the affected limb. In process of time the muscles waste, and the whole quarter becomes much attenuated. With respect to treatment, bleeding, physic, and counter-irritation are indicated. In chronic cases, a seton introduced along the course of the femur, five or six inches in length, and kept in from three to six weeks, produces the best effects. A rowel inserted immediately opposite the hip-joint, just under the trochanter major, proves very successful in more recent cases; and when the lameness is acute, a patten-shoe applied on the foot of the lame leg is a great auxiliary to the restoration of soundness.

In illustration of the above the following cases are adduced:

1. A bay gelding, aged, sixteen hands high, and worked in harness, had been lame for upwards of six months, showing symptoms of hip-joint lameness in the near hind leg. The lameness was most acute, and he could not trot. He was treated with the seton and patten-shoe, and became sound in two months, and has performed his regular work ever since.

2. A grey gelding, aged, and used in harness. He had been lame a long time, was treated with the seton, and recovered in six weeks, and has since stood regular work.

3. A bay mare, accustomed to harness; was treated by inserting a rowel opposite the hip-joint. She soon became sound, but the lameness returned in consequence of putting her to work again too soon. This was a recent case. These, and many other cases that might be recorded by me, are proofs of the efficacy of the seton in the treatment of deep-seated lamenesses.

CASE OF VOMITING IN THE HORSE.

By J. MEYRICK, M.R.C.V.S., Newtown.

AT the latter end of last August, I was sent for by a farmer living near Bwlch y Ffridd, a few miles from this town, to see a cart-mare which had just been vomiting about a bucketful of food through the nostrils and *mouth*. I asked the owner particularly if he was certain that the food had come through the mouth? and in reply he assured me that it did. The mare appeared to be in perfect health in all other respects; and the farmer told me that he had kept her for several years, and she had never had a similar attack but once, which was about a month before I saw her.

I gave

℞ Solutio Aloës, fʒviij;
Extract. Hyosecyamiæ, ʒij. In haustus.

and ordered her to be fed on gruel and bran mash for a day or two. She has continued quite well ever since. The mare had been living upon grass when attacked, and I have thought that the vomiting might have been caused by her eating some poisonous plant; but I cannot account for the food coming through her mouth, and her being in perfect health both before and after the attacks.

CASE OF PARAPLEGIA IN A DOG.

By the Same.

IN September, 1855, I happened to be attending some horses at a gentleman's house, and saw a terrier dog belonging to the groom, which was completely paralysed in the hind quarters, the consequence, and not an uncommon one, of distemper.

The animal had acquired the strange habit, however, which I have seen before in the same disease, of walking on his fore feet with the hind quarters balanced above his head! I made a tincture of *nux vomica*, of which I gave so much as contained the twenty-fourth part of a grain of strychnine daily for two months. At the termination of that time the dog had perfectly recovered, and was able to follow his master on horseback for miles.

CONTRIBUTIONS TO VETERINARY SCIENCE.

By J. MOIR, M.V.C.E., late L.T.C.

REMARKS ON GENOESE MULES.

THESE mules are short, thick, compact animals, and beautifully adapted for carrying burdens. Their usefulness in campaigning would exceed that of every other class of mules were it not for their aptitude to double over in their posterior phalangeal joints, which impaired and rendered a large proportion of them useless during the late Crimean campaign. The disposition with them to "knuckle" is so great that a slight scratch on the posterior region of the fetlock and foot was often sufficient to make them walk using chiefly the anterior wall and toe of the foot as the ground surface. In every disease situated in the posterior or lateral parts of the foot and fetlock, it was imperatively necessary, as the chief auxiliary means of effecting a cure, to have them shod with a shoe having a lever five or six inches long appended to it. The shoes adopted by the Genoese farriers were, in some respects, well constructed to counteract this evil.

The shoe used by them is of a wedge and staple-like form; breadth of web across the toe about two inches, at or near the heels one inch; thickness at the anterior part half an inch, tapering to the heels to an almost inappreciable thickness. They stamp the nail-holes round the inner margin of the shoe. Their method of preparing the foot for the shoe is decidedly objectionable. They appear to have an unconquerable antipathy to reduce the foot, with the exception of a small portion at the toe, which they remove. The frog they almost entirely excavate. The heels, which they ought chiefly to lower, are left untouched. They so adapt the shoe as to leave it projecting considerably at the toe, and more or less all round the inferior border of the foot. They attach the shoe by means of short nails having thick, clumsy, counter-sunk heads. They drive them firm, taking a considerable hold of the sole, after which the nail is acutely directed to the outside where they nip off the point and unceremoniously clench the nails without, as they say, uselessly resorting to the rasp.

If the heels of the shoe project posteriorly, they double them up round the heel of the foot.

A few of the predisposing causes which this inveterate

knuckling was in part due to were the conformation of the mules; such as the short and obliquely sloping downward direction of the pelvis; straight limbs; small tarsal and phalangeal joints; short and upright pasterns; and a long vertical foot, frequently allowed to grow to seven or eight inches in depth. This acquired aptitude, arising from their being reared and worked in hilly countries, combined with the improper treatment of the foot by the native farriers.

Though many of the mules in the Crimea were rendered useless from the above-mentioned causes, I generally succeeded in rendering them serviceable by means of shoeing, with the exception of two, which combated all pedal mechanical contrivances, and as a last resource I was necessitated to resort to tendiotomy. The preparatives being attended to, I operated accordingly first on No. 1 on both hind legs, and on No. 2 on one leg only, the other being quite *aplomb suite*. The usual treatment being observed, Case 1, at the end of four weeks, had so far recovered that he was able to take daily exercise; but, unfortunately, at this period the animal became infected with glanders, and had to be destroyed. Being curious to learn to what extent the healing process had gone on, I examined the limbs, and was surprised to find the divided ends of the tendons united with a tissue of nearly the same texture and organization. Case 2, when visited by Mr. Gloag, M.R.C.V.S., at the end of five weeks, could walk tolerably well, and daily went a distance of two miles to water. At the end of six weeks the animal was able to perform camp-duty for the first time in its life, and he afterwards continued to be useful. I do not wish it to be inferred that tendiotomy was crowned with the best of results, for there still remained the natural disposition to knuckle.

MARASMUS.

The symptoms exhibited by the animals that died in this wretched state, were depilation of the skin, with desquamation of the cuticle; eyes sunk in their orbits; the entire absorption of adipose tissue; skin dry, and immoveably fixed to all parts of the body; diminution of all the secretions, giving rise to impaired digestion and constipation of the bowels; urine scanty, and of a deep colour; appetite voracious; back roached; and animals standing with their feet all drawn together, and presenting at last a frightful and deplorable spectacle.

The abnormal appearances, *post-mortem*, were strikingly

interesting and characteristic. The lungs were tuberculated; the costal membrane was covered generally with small hard knobs of an earthy consistence; the liver was diminished in size and scirrhus, containing tubercular matter, and when cut into, its tubes frequently contained flukes; the spleen was also tuberculated, and the peritoneum was studded all over with tumours similar to those of the costal pleura; the mesenteric glands and the intestines were tuberculous, and the latter viscera were sometimes found in a state of ulceration, and invariably they contained large quantities of worms.

MANGE.

The disease first manifested itself on the neck and shoulders, and the thinnest parts of the skin, and thence rapidly extended over all the body. The hair fell off, leaving exposed small red spots, having intolerable itchiness, which induced the animal constantly to rub and bite himself. The adipose tissue entirely disappeared, leaving the skin adherent to the body. It soon became thickened with scurf, and rose into large folds, like the skin of the hippopotamus. Between these ridges and under the scurf, it was often raw and ulcerated. The eyes became sunken in their orbits; there was general wasting and emaciation of the body; the appetite being almost fiendish to the last. The animal gradually sank from total exhaustion of the vital force. The autopsy generally revealed no very marked disease. The usual appearances were, paleness and flaccidity of all the tissues, with, occasionally, large accumulations of unhealthy mucus in the intestines.

The treatment of this intractable disease was very unsatisfactory. The rigor of the climate, and the want of proper clothing, often forbade and rendered our best curative treatment worse than useless, and even hurtful.

To have removed their horn-like and hairy covering, either by digestive or detergent applications, and clipping them without being able to clothe and protect them from the cold, had the infallible effect of cutting short their existence. Many animals were dressed with coal-tar, which formed a thick matted covering at the extremity of the hair, impenetrable to wet; but this apparently good quality was more than counterbalanced, as it did not reach the skin itself, and effectually prevented every other application from doing so. White-washing with lime and water was recommended, and adopted by some, but with the few on which I tried it, it rendered the skin dry and hard, and com-

pletely denuded of hair, and exposed the animals to starvation by cold.

The treatment I found most beneficial was to give them succulent food, and externally to apply the common mange-ointment; also solutions of arsenic and corrosive sublimate, and a compound of sulphur and lime, made by boiling ten parts of lime-water and one of sulphur together, which proved to be both an efficacious and convenient application.

It may be important to remark the incredibly short period in which the malady proved fatal in many cases. The animal sank from the intense irritation set up at the end of ten or twelve days from the time of its first attack.

It was also of a highly contagious character, and capable of being transmitted to man, of which I had many very conclusive proofs. I observed in every case that the men appointed to do duty with them, who entered the veterinary hospital free from any cutaneous disease, were invariably affected in two or three days after with a cutaneous disease similar to that in the quadruped.

RUPTURE OF ONE OF THE CORONARY VEINS OF THE HEART.

Of this case previous to death I was unable to learn anything as to what could possibly have been the cause of this grave lesion. The stable orderly observed the animal feeding and apparently in perfect health, and on visiting him a few minutes afterwards he found him dead. On examination after death I found the pericardium distended with dark venous blood, and when evacuated, I could trace its source to be a rupture of the coronary vein. The heart and all its valves with the other vessels were normal.

RUPTURE OF THE ILEUM RESULTING FROM WORMS.

In the early stage of this disease there was no distinctive symptom to indicate its true nature; but towards the closing scene, the symptoms were such as to lead to an infallible diagnosis. These were gradual sinking with nausea, the animal endeavouring to vomit; cold sweats; pulse weak and small; death.

The *post-mortem* showed a rupture of the ileum to have taken place, and in the abdomen, with the fæces, were found a large quantity of worms, while in the immediate neighbourhood of the rupture were to be seen traces of disorganization, and in many other parts of the intestine there was ulceration with attenuation, which I unhesitatingly pronounced to be the result of the ravages of these parasites.

Facts and Observations.

AN IRISH REMINISCENCE.

By "ACTEON."

WHEN at Spansilhill fair, in the County Clare, June, 1855, I was requested to examine a horse that was purchased by a friend of mine, to drive. Nothing could be detected wrong with the animal, except a very haggard appearance of the eyes, and a dry feeling of the buccal membrane, I may say *peculiar*, inasmuch, as I never before met with such a harsh grating feel of the tongue and lips. The animal's wind appeared perfectly healthy, try him how I would. I could not, however, elicit a cough. Not being satisfied with the animal, and without, I may say, any very tangible cause of suspicion, except of exhaustion, he was given a bucket of water, which he drank off the ground, when a thick aqueous discharge issued from both nostrils, his sides began to heave, and a canter of a hundred yards disclosed a bad case of broken wind. Having heard of these cases, but never meeting with one before, I was anxious to become acquainted with the method of "setting," as it is called; and with some difficulty I found out the nefarious owner, who proved to be the head of a clan of "tinkers," that infest the whole of the fairs in the south of Ireland. Getting into conversation upon matters foreign to the present letter, I at last introduced the subject of the horse, and he candidly confessed the animal had been "dosed," and boasted that he could cure for a time any broken-winded horse, but he would not disclose the secret. I met the "tinker" at a great many fairs afterwards, and ultimately obtained the following "infallible cure" as he termed it. "Begin by taking five quarts of blood away, and give a dose of physic, then give half a pound of butter each day for ten mornings; then give one pound of molasses, and the morning he is to be shown for examination, give half a pint of linseed oil. The horse is to be fed the whole time on grass." The above receipt is exactly as I received it, but not having had an opportunity of testing its merits, I cannot vouch for its efficacy.

STURDY IN SHEEP.

MR. J. M'CALL, student, Veterinary College, Edinburgh, in a communication forwarded to us, in which he refers to the review of an Essay that has appeared in 'The Highland and Agricultural Society's Journal,' showing that this disease affects only those flocks of sheep which are attended by dogs, remarks :

"To recount my experience on sturdy, as it affects sheep in Ayrshire, I may briefly state that hydatids in the brain, or turnsick, sturdy, &c., prevails in the upland or moorland sheep-walks, and that there it is difficult to manage flocks of sheep without attentive men and good dogs. A fact not to be forgotten is, that in the upland districts hares and rabbits are very plentiful. In the lowlands, on arable soil, there is every facility for sheep to be fenced in, and accordingly dogs are rarely used, except one chained up to guard the farm-steading. So unaccustomed are the sheep on the lowlands to the sight of a dog, that they will take to flight on the appearance of one at a distance ; whereas the upland sheep are quite at home and cool when barked at and driven by a colley.

"In the lowland sheep we have no sturdy, or at all events very exceptional cases ; and all the cases I have seen have been in the moorland sheep, purchased to feed on the turnips on the lowland farms. The distribution of sturdy in the county of Ayrshire unquestionably proves that where dogs, rabbits, hares, and men, are located together, hydatids in the brains of sheep are frequently to be met with ; and from all we know now of the development of the *cysto-cestoid* worms, we must infer, that for the propagation of certain animal parasites, several species of the higher orders of animals must cohabit, and that the means to be adopted for diminishing the chances the parasites have to multiply is to keep the various animals, which such parasites infest at different stages of development, isolated from each other. You might, as Professor Gamgee says, prevent sturdy by preventing or curing *tænia* in the dog ; but the best way is to keep the dogs from the sheep, especially from the lambs. It is clear all the old views on sturdy are proved to be wrong. The disease is not hereditary ; it does not depend on the dogs worrying the sheep, but on the dogs being subject to tapeworm."

PROFESSOR SIMPSON'S CAUSTIC.

THE new caustic agent recently introduced by Professor Simpson, of Edinburgh, consists of an ounce of highly dried sulphate of zinc, mixed with a drachm of glycerine, and applied as a paste to the diseased part. It quickly produces its effects, and a few applications are deemed sufficient to effect a cure. One great advantage which this caustic is said to possess is, that it acts only upon parts denuded of cuticle, therefore the fingers are free from its influence. It has been successfully used by the human surgeon, but we question if it will prove sufficiently powerful for veterinary purposes. Of the efficacy of the *chloride* of zinc we can confidently speak.

FOREIGN BODY FOUND IN A BULLOCK'S HEART AFTER DEATH.

FROM time to time, we hear of remarkable cases of foreign bodies traversing many parts of the animal economy, being afterwards found in peculiar situations, and frequently causing little or no inconvenience during life. This case in point presents an example of this description. A few months ago, a stout, healthy bullock was slaughtered by a butcher residing in this town. On removing the thoracic viscera, a *pack pin*, about two inches and a half in length, was found protruding through the substance of the right ventricle. On examining the heart minutely, the pin was found to have entered near the apex of the left ventricle, and passed completely through the substance of the heart, emerging about the centre of the right ventricle. A small, ulcerated spot existed in the external wall of the right ventricle, where the head of the pin was in contact with the inner surface of the pericardium. No extravasation of blood had taken place within the pericardium, the adhesive inflammation set up being sufficient to prevent such an occurrence. The pin was very much corroded by the action of the fluids of the body, and seemed, from its appearance, to have remained a considerable period in the animal's body.—*Lancet*.

BULLOCKS POISONED BY THE YEW.

ON Saturday last, seven bullocks, belonging to his grace the Duke of Buccleugh, died suddenly on the farm of Holestain, parish of Durrisdeer. The cattle, it appears, were turned out to pasture in a field, in the vicinity of which were a number of yew-trees; and having partaken freely of the branches, they almost immediately became unwell, and shortly afterwards expired.—*The Field*, March 28, 1857.

THE HOG CHOLERA.

THE ‘American Veterinary Journal,’ for February, makes mention of a destructive disease which prevails among the pigs in the Ohio Valley, and which has destroyed a large number of these animals, two individuals having lost as many as five hundred. “A panic prevails among the hog-feeders, and they are selling off the animals as fast as they can.” The farmers call the disease cholera; the spasms and other symptoms exhibit similar evidences of congestion to those manifested by human beings when seized with that disorder. In the following number of the same periodical we find it stated that a fatal malady has prevailed among hogs in the Ohio Valley during the last six months. It is computed that between 60,000 and 70,000 have fallen victims to the destructive distemper within a circumference of a hundred miles surrounding Cincinnati. The disease is considered incurable, having baffled the most critical investigations into its nature, and as steadily resisted all remedial agents. The malady has been vaguely denominated “cholera,” from the failure to discover its true character, and upon that principle which a few years ago prompted mankind to apply the same term to all ills which resemble “cholera” in the human body, and which they did not comprehend. The distemper of which we treat is similar in some of its operations to cholera, and in others it resembles erysipelas.

Mr. Thomas Graff, proprietor of the extensive distilleries and hog-pen apartments at Lawrenceburg, and who has lost about four thousand hogs this season by the ravages of the hog-distemper, has devoted his time patiently and indefatigably in seeking to fathom the profound and alarming mystery, but with indifferent success. His examinations, observations,

and experiments, however, have satisfied him that the malady is infectious.

He at first attributed the disease to the "still-slop," with which his stock was fattened, although he entertained many doubts, from the fact that cattle fed on similar food were not affected. He, however, instituted inquiries among farmers remote from distilleries, and who fed their hogs on corn exclusively, and found the mortality equally great in their droves. He then procured four or five perfectly healthy hogs and enclosed them in a "hospital pen" where many others had died. He fed them exclusively on corn and water. In a few days they sickened and speedily died, thus proving the infectious character of the disease. He also observed that hogs belonging to farmers along the road on which the dead distempered hogs were hauled to be thrown away were swept off by scores, thus confirming his previous test.—*Southern Planter.*

Extracts from British and Foreign Journals.

THE APPREHENDED MURRAIN.

ORDER IN COUNCIL.

(From the Supplement to the *London Gazette* of Friday, April 3—
Saturday, April 4.)

AT the Court at Buckingham Palace, the 2d day of April, 1857. Present, the Queen's Most Excellent Majesty in Council.

Whereas it has been represented to Her Majesty that certain contagious or infectious disorders are now prevalent among cattle in certain countries or places bordering upon the Baltic Sea, and that there is danger of the said disorders being introduced into this country by means of cattle, and horns, hoofs, and raw or wet hides or skins of cattle, from such countries or places; now, therefore, Her Majesty, by and with the advice of her Privy Council, doth order, and it is hereby ordered, that from and after the date hereof no cattle and no horns, hoofs, or raw or wet hides or skins of cattle, shall be imported or introduced into the united kingdom which shall come from or shall have been at any place within those territories of the Emperor of Russia, or of the King of Prussia, or of the Grand Duke of Mecklenburg.

Schwerin, which respectively are in or border upon the Gulf of Finland, or any other part of the Baltic Sea between the Gulf of Finland and the territories of the Free City of Lubeck, or which shall come from or shall have been at any place within the territories of the Free City of Lubeck; and also that, from and after the date hereof, no cattle and no horns, hoofs, or raw or wet hides or skins of cattle, shall be imported or introduced into the united kingdom which shall be, or shall have been, on board any vessel at the same time with any cattle or horns, hoofs, or raw or wet hides or skins of cattle, which shall have come from or shall have been at any such place as aforesaid.

And Her Majesty, by and with the advice of her Privy Council, doth hereby further order, that all cattle, and all horns, hoofs, and raw or wet hides or skins of cattle, the importation or introduction whereof is so hereby prohibited as aforesaid, and also all hay, straw, fodder, litter, or manure, being or having been in or on board any vessels at the same time with any such cattle, or horns, hoofs, or raw or wet hides or skins of cattle as aforesaid, shall, upon their arrival in this country, be destroyed, or otherwise disposed of, as the Commissioners of Her Majesty's Customs may direct.

And the Right Hon. the Lords Commissioners of Her Majesty's Treasury are to give the necessary directions herein accordingly.

C. C. GREVILLE.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

At a Monthly Meeting, held on Wednesday, the 1st of April, the Earl of Clarendon favoured the Council with the following communications on the Cattle Murrain:

FOREIGN OFFICE; *February* 28, 1857.

"SIR,—With reference to Mr. Hammond's letter of the 12th of June last, I am directed by the Earl of Clarendon to transmit to you, to be laid before the President and Council of the Royal Agricultural Society, the accompanying copy of a despatch from the British Vice-Consul at Lubeck, stating that the murrain having again broken out at Mecklenburgh, the Lubeck authorities had prohibited the introduction of horned cattle from that state, unless provided with a certificate declaring them to be free from the disease.

I am, sir, your most obedient, humble servant,

"James Hudson, Esq."

"SHELBURNE.

"LUBECK; *Feb.* 20, 1857.

"SIR,—I have to report that in consequence of the murrain described in my despatch of May 30, 1856, having again broken out in Mecklenburgh, the Lubeck Government, by a senatorial decree published this day have renewed the decree of May 14, 1856, prohibiting the entry of horned cattle into the Lubeck territory from the Duchies of Mecklenburg-Schwerin and Mecklenburg-Strelitz, unless they are certified by the competent authorities to be entirely free from the disease.

"I have, &c.,
(Signed) "J. A. BLACKWELL.

"Colonel Hodges."

"FOREIGN OFFICE, *March* 10, 1857.

"SIR,—I am directed by the Earl of Clarendon to transmit to you, to be laid before the President and Trustees of the Agricultural Society, a copy of a despatch from her Majesty's Minister at Berlin, relative to the disease in cattle.

"I am, sir, your most obedient servant,
SHELburne.

"J. Hudson, Esq., Agricultural Society."

"BERLIN; *March* 6, 1857.

"MY LORD,—Having observed that mention has been made in the House of Commons of the rapid spreading of the cattle disease, I have the honour to report to your lordship that according to the latest accounts received here, it does not appear to have crossed the Russian frontier; but alarm has been caused by its ravages in the neighbourhood of Tauroggen. Precautionary measures have been taken by the Prussian authorities to endeavour to arrest its advance into this kingdom.

"I have, &c.,
(Signed) "BLOOMFIELD.

"The Earl of Clarendon."

"FOREIGN OFFICE; *March* 23, 1857.

"SIR,—I am directed by the Earl of Clarendon to transmit to you, for the information of the President and Trustees of the Royal Agricultural Society, an extract of a despatch from her Majesty's Minister at Brussels, relative to epidemic diseases among horned cattle in Belgium.

"I am, sir, your most obedient humble servant,
"SHELburne.

"The Secretary of the Royal Agricultural Society."

[*Extract from* LORD HOWARD DE WALDEN'S *Despatch*, No. 44.]

"On receipt of your lordship's despatch, No. 33, of the 14th inst., respecting epidemic disease among horned cattle, I immediately made inquiries as to the existence in Belgium of the disease referred to. I am assured by one of the principal veterinary authorities in the country that at this moment the only complaint which is at all prevalent is an affection of the hoof, which is easily cured by cleanliness and the use of astringents; that the disease called peripneumonia, which at times has caused such ravages amongst the cattle in Belgium, though occasionally appearing, has not at present anything of the character of an epidemic."

"BRUSSELS; *March* 27, 1857.

"MY LORD,—With reference to my despatch, No. 44, of the 20th inst., in which I transmitted to your lordship a copy of the Arrêté of May 22, 1854, I have now the honour to add one of the first copies of a work which

has just been printed, under the authority of the Department of the Interior, which contains a full recapitulation of all the laws and regulations which bear upon the general veterinary service in regard to sanitary questions connected with the diseases of animals. In respect to the statement I made in my despatch, that no special disease, presenting anything of the character of an epidemic, is now prevalent in Belgium, I have since received full confirmation of the correctness of that information from the Department of the Interior. No law exists under which diseased cattle can be excluded at the frontier; a project of law with a view to such sanitary precaution was presented to the Chambers two years ago, but was rejected; and therefore the only resource lies in the activity of the Burgomasters in frontier localities, by enforcing the general regulations in regard to animals while within the range of their jurisdiction.

"I am, &c.,

(Signed) "HOWARD DE WALDEN AND SEAFORD.

"Lord Clarendon."

"FOREIGN OFFICE; *March 28, 1857.*

SIR,—I am directed by the Earl of Clarendon to transmit herewith, for the information of the President and Trustees of the Royal Agricultural Society, a copy of a despatch from her Majesty's Minister at Berlin, reporting the appearance of the cattle disease in the Prussian dominions. I am to add that this information was communicated to the Board of Trade immediately upon its receipt.

"I am, sir, your most obedient, humble servant,

"E. HAMMOND.

"The Secretary to the Royal Agricultural Society."

"BERLIN; *March 25, 1857.*

"MY LORD,—I regret to have to inform your lordship that the cattle disease has appeared in the neighbourhood of Berlin. Every precaution was supposed to have been taken to prevent its arrival in the Prussian States, and measures have now been adopted to endeavour to arrest its progress. Having alluded to the subject this morning in the course of conversation with Baron Manteuffel, his excellency read to me a communication which he had just received from Monsieur de Raumer, stating that the disease had been traced to some cattle lately arrived from Galicia, and that those which had not died had been killed by order of the magistrates, and that further, all the cattle known to have been in contact with them had been destroyed. Baron Manteuffel appeared to be under considerable alarm that the disease would reappear, notwithstanding these precautionary measures and the utmost vigilance of the authorities.

"I have, &c.

(Signed)

"BLOOMFIELD.

"Earl of Clarendon, K.G."

"FOREIGN OFFICE; *March 30, 1857.*

"SIR,—I am directed by the Earl of Clarendon to transmit to you, to be laid before the President of the Royal Agricultural Society, the copy of a despatch from her Majesty's Chargé d'Affaires at Hamburgh, forwarding a copy and translation of the decree issued by the Lübeck Government, on May 14, 1856, relative to diseased cattle.

"I am, sir, your most obedient, humble servant,

"E. HAMMOND.

"Jas. Hudson, Esq."

[TRANSLATION.]

"May 14, 1856.

"Notification relative to the pulmonary disease that has broken out among the horned cattle within the Grand Duchy of Mecklenburg-Schwerin, published on May 15, 1856.

"The Senate, being officially informed that several cases of pulmonary disease have occurred among the horned cattle within the Grand Duchy of Mecklenburg-Schwerin, think it proper to republish the regulations directed to be observed by the notification of the 7th of August, 1852, in order to prevent the spreading of this dangerous and contagious disease. 1. Every owner of cattle is required, in case any disease should break out among the same, to separate the diseased from the other cattle. The symptoms of the disease are a hoarse coughing, that increases particularly after the cattle have drunk or moved about; less inclination for food, indifference as to chewing the cud, dulness of the hair, and its rough appearance in particular places, and fever after these symptoms have continued for some time. 2. On the appearance of this disease, or even in cases when it is suspected to exist, the owners of cattle are required, under a penalty of a fine of 20 dollars (about £3 10s.), to give immediate notice to the chief of the police (or to the bailiff at Travemünde), who will take further steps. 3. The bringing in of cattle into the Lübeck territory from the Grand Duchies of Mecklenburg-Schwerin and Mecklenburg-Strelitz, shall only be permitted when the cattle are accompanied by satisfactory certificates of their being free from disease. 4. All veterinary surgeons are directed, in case this disease should break out within the Lübeck territory, to adopt the necessary sanitary precautions according to the instructions of the police. The directions of the veterinary surgeons are implicitly to be obeyed under penalty of heavy fines and imprisonment. 5. Finally, all police officers, bailiffs, and gens d'armes are hereby directed to give notice to the respective police-offices in case any horned cattle should be attacked with the pulmonary disease, or even in cases where it is suspected to exist. Given at Lübeck, in the Assembly of the Senate, this 14th day of May, 1856.

(Signed) C. TH. OVERBECK, Dr., Secretary."

"HAMBURG; March 20, 1857.

"MY LORD,—In compliance with the instructions contained in your lordship's despatch, Consular No. 7, of the 14th instant, I have the honour to transmit three copies of original, and translation of the decree of the Lübeck Government, dated the 14th of May, 1856, relative to diseased cattle.

"I have, &c.,

"G. LLOYD HODGES.

"Earl of Clarendon."

"FOREIGN OFFICE; April 1, 1857.

"SIR,—With reference to my letter of the 23d ult., I am directed by the Earl of Clarendon to transmit to you, for the information of the Council of the Royal Agricultural Society, a copy of a further despatch from her Majesty's Minister at Brussels, containing particulars as to the disease amongst horned cattle.

I am, sir, your most obedient, humble servant,

"SHELBURNE.

"The Secretary of the Royal Agricultural Society."

"FOREIGN OFFICE; April 1, 1857.

"SIR,—I am directed by the Earl of Clarendon to state to you, for the information of the President and Trustees of the Royal Agricultural

Society, that her Majesty's Minister at Dresden reports, in a despatch received this day, that 'at this moment the only existing cattle disease in Saxony is of the horns; that of the lungs, called in French "Epizootic," does not now exist.'

"I am, sir, your most obedient, humble servant,
"SHELBURNE.

"J. Hudson, Esq."

"FOREIGN OFFICE; *March 30, 1857.*

"SIR,—I am directed by the Earl of Clarendon to transmit to you, to be laid before the President and Committee of the Royal Agricultural Society, copies of telegraphic despatches from her Majesty's Consuls at Danzig and Stettin, stating that the murrain does not exist amongst the cattle in the neighbourhood of those cities.

"I am, sir, your most obedient, humble servant,
"E. HAMMOND.

"Jas. Hudson, Esq."

"*From Consul ST. PLAU to the Earl of CLARENDON, dated DANZIG, March 29, 1857.*

"No information to give as to cattle disease has at all appeared in this neighbourhood, it having been confined to East Prussia and Lithuania. The authorities here have in no case been called upon to give any directions or instructions."

"*From Consul BLACKWELL to the Earl of CLARENDON, dated STETTIN, March 29, 1857.*

"Murrain does not prevail here. Regulations against it rescinded. Full account of disease given in my despatch of May 30, 1856.

(Signed) "BLACKWELL."

"FOREIGN OFFICE; *March 30, 1857.*

"SIR,—I am directed by the Earl of Clarendon to transmit to you, to be laid before the President and Committee of the Royal Agricultural Society, copies of despatches from her Majesty's Consuls at Warsaw and Königsberg, reporting on the cattle disease.

"I am, sir, your most obedient, humble servant,
"E. HAMMOND.

"Jas. Hudson, Esq."

"WARSAW; *March 9, 1857.*

"MY LORD,—I have the honour to report to your lordship that the cattle disease, which has caused such ravages in the farms of the landholders in this kingdom, is still prevalent, though not, so far as I can understand, so much so as it was during the autumn. Within the last fortnight a gentleman of my acquaintance lost nearly every beast he possessed in the neighbourhood of Warsaw. The infection is so virulent that it is said a farm servant, who has been in attendance on sick cattle, may carry it in his clothes, and impregnate other beasts with the fatal distemper. The measures adopted to stop the spread of the disease are very summary, the most indiscriminate slaughter of the beasts affected being ordered and carried out. In Prussian Poland, where a more stringent execution of these measures has been enforced than has been the case in this country till a late date, it is said that the evil has been nearly, if not wholly overcome. I am not aware whether an exportation of cattle takes place from Dantzic for the British ports. If there should be such a trade, it might be advisable to subject all beasts imported either from that town or

Königsberg to a lengthened quarantine, as there seems to be no doubt that the disease occasionally breaks out in herds some time after they have been domiciled in their new quarters. The disease originally comes from the Steppes of the Ukraine, whence vast numbers of cattle are yearly driven westward. It would appear to commence with violent fever, which rapidly degenerates into acute dysentery, the animal dying in a few days after the first appearance of the disorder, of intestinal ulceration.

"I have, &c.

(Signed) "W. W. MANSFIELD.

"The Earl of Clarendon."

"BRITISH CONSULATE, KÖNIGSBERG; *March 11, 1857.*

"MY LORD,—I have the honour to acknowledge the receipt of Lord Shelburne's despatch, No. 2, of 7th of March, and to report that since 1854 rumours of a murrain or cattle-plague in Volhynia and Podolia were current, and that since that time the disease has been advancing in a northerly and westerly direction, and that most distressing accounts have been received of the ravages amongst the cattle, and of the disease spreading till close upon the Prussian frontiers. The Prussian government, during the years 1855 and 1856, took great precautions to prevent the disease from entering Prussia, by detaching parties of military at all the points of egress from Poland below Thorn. In the autumn of 1856 until now the disease has continued its march, and at last reached Kowno and Tauroggen. The Prussian government has now enforced most stringent measures all along the borders; and no hides, calf-skins, wool, rags, or any article which is likely to have been in any way connected with cattle, and all Jews and other persons who are in any way suspected of having transactions with cattle or any of those articles, are permitted to cross the borders, and when any such attempt is made the articles are immediately burned. By these means the disease has, up to the present time, been kept out of Prussia, and the greatest vigilance is observed to destroy and bury any animal when a suspicion of infection exists. The dealers have for some time past avoided the Prussian route, and take their goods to Russian ports, particularly to Libau, for shipment; and Russian hides and calf-skins, which formerly went through the Prussian ports, all go that way now. I may add, that the hide and calf-skin export, which was formerly of great magnitude to Great Britain, has now taken a different channel. The skins go now almost all to Lübeck, and from thence to Frankfort-on-the-Maine, or to Stettin, and from thence to Berlin, &c.; and it is not impossible that the infection may be carried to the heart of Germany by these means, although the precautions of the Prussian government may have warded it off from the eastern frontiers. I have never heard that live cattle have been shipped from the Baltic ports. The disease is reported to be a violent purging and sudden death.

"I have, &c.

(Signed) "W. J. HERTSLET.

"The Earl of Clarendon."

"FOREIGN OFFICE; *March 31, 1857.*

"SIR,—I am directed by the Earl of Clarendon to transmit to you, to be laid before the President and Committee of the Royal Agricultural Society, copy of a telegraphic despatch from her Majesty's Consul at Memel, reporting the symptoms of the murrain amongst the cattle.

"I am, sir, your most obedient, humble servant,

"E. HAMMOND.

"Jas. Hudson, Esq."

From Consul CAMPBELL to the Earl of CLARENDON, dated MEMEL, March 30, 1857.

"Animal loses appetite. Body trembles. Gums inflame. Eye dull, with discharge. Food becomes powder in stomach. Severe diarrhœa. No cure discovered. Eight days dead."

Communications were then read from Mr. Hall Maxwell, C.B., Secretary of the Highland and Agricultural Society of Scotland, and from Captain Croker, Secretary of the Royal Agricultural Improvement Society of Ireland, expressing their willingness to concur with the Royal Agricultural Society in arrangements for despatching a Veterinary Inspector to districts abroad where the cattle murrain is at present raging. The Council agreed to the following resolution :

"That it is expedient to send a competent Veterinary Professor to examine into the nature of the cattle-murrain on the Continent. That the Society gladly accepts the co-operation of the Highland and Agricultural Society of Scotland, and the Royal Agricultural Improvement Society of Ireland, in this step. The Society ventures to recommend that Professor Simonds, of the Royal Veterinary College, be commissioned to this task. That he be empowered to take with him a German Veterinary Surgeon, established in London, quite competent for the business, and who would smooth the difficulties of the German language. It is supposed that about three weeks would be required for a satisfactory examination. That the Highland and Agricultural Society of Scotland be informed that the Royal Agricultural Improvement Society of Ireland propose to share the expense of this mission with the Royal Agricultural Society of England; and that they be asked to join in the same manner."

[Since going to press, we have received the following :]

BROMPTON BARRACKS, CHATHAM; *April 23, 1857.*

GENTLEMEN,—I have no doubt that your attention has been directed to the able communications of the 'Times' correspondent, which appeared yesterday and the day before, on the subject of the murrain in cattle.

What I wish to state with reference to those articles is, that the observations I have addressed to you on this subject are confined, *at present*, to what is there described, "The real Murrain of Cattle Plague," "Rinder Pest," "The Löser Dürre."

Yours truly,

T. WALTON MAYER, V.S. R.E.F.E.

To the Editors of the 'Veterinarian.'

Letter by Dr. HEADLAM GREENHOW, Lecturer on Public Health at St. Thomas's Hospital, to the General Board of Health.

"To the Right Hon. W. MONSELL, M.P., President of the General Board of Health, &c.

"SIR,—As great misapprehension and much unnecessary alarm have arisen from the reported existence of a very fatal and contagious murrain among the horned cattle of those continental States from which cattle are chiefly imported into this country, it is desirable that the real facts should be understood. The disease at present or recently prevailing in Holstein and the adjoining countries is the 'pulmonary murrain,' and is identical with the 'lung disease' that has proved so destructive among the herds and dairies of Great Britain and Ireland during the last fifteen or sixteen years.

"Although possessed of infectious properties in a moderate degree, the 'lung disease' is known to arise spontaneously under certain ill-understood conditions of food and season, and is not usually believed to have been imported hither from abroad. It is almost universally diffused throughout this country, having from time to time broken out in an epidemic form in particular localities, and again disappeared, without any very obvious cause. Being already quite as prevalent here as on the continent, no danger exists to our cattle from the importation of foreign cattle suffering from the disease.

"Notwithstanding this, all animals suffering from this or any other serious disease that arrive from abroad are detained by the professional inspectors of the Board of Customs, and, if necessary, immediately slaughtered, their bodies being effectually destroyed if found to be unfit for human food, or, if otherwise, then delivered to the owner. The 'lung disease' is the only epidemic disease at present prevailing among the cattle in countries from which horned cattle are imported into Great Britain.

"There is, however, another much more contagious and fatal disease, called in Germany the 'Rinder-pest' or Steppe murrain, which appears to have been confounded with the lung-disease, but which, with one or two trivial exceptions, does not at present exist in any part of Germany or the west of continental Europe. This 'Steppe murrain' is a totally different disease from the pulmonary murrain, and is spon-

taneously developed only in Bessarabia, Podolia, and other countries of Southern Russia, from which it is never absent, and whence it frequently spreads by contagion into Poland, and sometimes into Prussia and Austria.

“The most stringent measures are employed by the Russo-Polish authorities, and by the Governments of Austria and Prussia, to exclude this form of murrain from their respective territories. A regulation was published in Poland on the 9th of May, 1856, ordering the indiscriminate slaughter of all beasts that should exhibit any symptoms of the disease, under which, according to a recent return, 20,000 animals have already been slaughtered.

“Independent of these measures in the interior of the country, quarantine stations have been established on the Russo-Polish frontier, where beasts coming from the East are detained for three weeks. Similar measures for the exclusion and extirpation of the disease, should it show itself within those countries, have long been in force on the frontiers of Austria and Prussia. In Austria the infected cattle are immediately killed as soon as they show any appearance of the murrain, their companions being kept in quarantine; and regulations still more stringent are enforced in Prussia, for both the diseased animals and all other beasts that have been in contact with them are there killed and buried eight feet under ground, quicklime being thrown into the pits.

“These regulations have been most sternly enforced, and not only has the importation of cattle from Poland, where the murrain is at present believed to exist, been prohibited, but rags, hides, hoofs, hay, wood, and similar articles likely to have been in any way connected with cattle, and all persons suspected of having transactions with cattle, have been forbidden to cross the frontier. To enforce these regulations detachments of troops have been stationed along the frontier at all the points of egress from Poland below Thorn.

“Notwithstanding these precautions, the murrain occasionally passes into Austria and Prussia, and intelligence has been received by our Government that it has recently been imported into both these monarchies. It has been conveyed into Silesia, in the neighbourhood of Breslau and Oppeln, by means of diseased cattle said to have been purchased in Galicia, but has not spread into any other Prussian province, and has, in fact, thus far been confined to the oxen of the infected herd. Most effective measures have been taken to arrest the disease, ‘and, judging from the experience of last year, there is every reason to hope that its propagation will be prevented, and its extinction secured.’

"As soon as the murrain was known by Her Majesty's Government to have reached Kowno, Tauroggan, and other places in the vicinity of the Prussian frontier, an order in Council was issued forbidding the importation of cattle, and of hides, horns, hoofs, fodder, or other articles likely to be vehicles for conveying the contagion into this country, from any port in the Baltic east of Denmark, thus preventing all possible danger of the importation of this disease, so long as it shall be confined to the eastern frontier districts of Prussia. In addition, however, to this precaution, the greatest watchfulness over the importation of cattle is maintained by the veterinary inspectors of the Board of Customs, both at London and the other ports of importation.

"I have the honour to be, sir,

"Your obedient servant,

"E. HEADLAM GREENHOW, M.D.,

"Lecturer on Public Health at St. Thomas's
Hospital, &c.

"LONDON; *April 11.*"

THE RELATIONS OF FOOD AND DISEASE.

IN considering the subject of diseased animal food, in our last number, we referred incidentally to the question, whether diseased structures can or do convey disease to the human body receiving them as sustenance?

This question is one surrounded with difficulties. It must be met fairly and frankly, it must be answered scientifically, it must be answered positively.

Looking at the subject in its simple form, the evidence, *a priori*, would be strongly in favour of the suspicion that, by the medium of diseased milk as food, almost any poison may be transmitted from the body of one animal into that of another. Through her milk the syphilitic wet-nurse transmits in some cases the disease to the suckling child. Through the milk secretion every soluble vegetable and mineral poison is easily transmissible. We have ourselves thus detected the transmission of antimony, mercury, and iodine, from parent to offspring; and we think it possible that in one case of cholera in an infant at the breast, the disease was directly conveyed by the same channel from the suffering mother. If there be, then, any truth in these propositions, it should obtain that the milk of diseased cows, taken as it often is uncooked, must needs be a prolific source of disease in the human race.

But is it so in fact? Can fifty, nay, twenty, well-marked instances be adduced indicating that any disease has originated in the child, the man, or the woman, from the use of diseased milk? In what way does diseased milk act? Grant that a cow has cow-pox, is there proof that the drinking of such cow's milk will propagate to the drinker cow-pox, or small-pox, or any disease? Grant that a cow has typhus, will her milk convey typhus, or a modified form of it, to the human subject?

From fluid flesh to solid,—Can fifty, nay twenty, carefully observed instances be enumerated, in which, from the eating of diseased flesh, well-marked signs of any special and communicable disease has originated? We have some positive facts about the sausage-poison; but these, comparatively speaking, have sprung up accidentally. The symptoms have been such as isolate the cases from any general and classified disorder, and the poison itself is possibly generated in the process of decomposition in the dead substance.

Allowing for a moment that the flesh of diseased animals received into the human body has the effect of operating as a poison, what are the modifications of symptoms which it induces, as compared with the original symptoms in the diseased animal? What positive relations do the epidemics in the lower animals bear to the epidemics in man? What modifications in type are produced in the passage of the epidemic disorder from an animal of one class to an animal of another class? Some flickering light on this point, in reference to smallpox and the cow, and cow-pox and man, is all that relieves the darkness of science here at the present time.

Another point. We will not dream of going back to the efficient causes of epidemics; but we would propound this first and broad inquiry. Is the propagation of epidemic disorders limited to the animal kingdom? Are all the germs of epidemics formed and circulated only in the animal domain? Or does the epidemic phenomenon take a wider root? Can it be traced back to the vegetable world? Again, can an epidemic arise spontaneously, as from causes external, *i. e.*, independently altogether of the idea of simple propagation of animal or vegetable transmission? Can variations of heat, of electricity, of humidity, excite any special disease which, once communicated to man or animal, shall be communicable to other men and animals?

In the absence of labours bearing on these all-important and primary inquiries, the so-called science of epidemiology is no science at all, but a perplexing chaotic record of confusion.

Returning to the question of diseased food, and assuming for the moment that contagious diseases are transmitted to man through this medium, what, we would inquire, are the circumstances which favour, what are those which hinder, such transmissions? Will a portion of the worst form of diseased food, after being subjected through its whole structure to the boiling temperature, by any possibility convey disease? Judging from experiments on the effects of heat upon smallpox virus, the answer, *a priori*, would be against such a proposition; but "the proof of the 'poison' lies in the eating," and the proof has not been given.

Assuming, further, that diseased animal food may, after exposure to heat, retain its elements of disease, the effect of digestion upon it must not escape attention. Snake-poison received into the body through a wound soon does its work, but received into the stomach is simply innocuous. A prick from a needle charged with an infinitesimal dose of some unknown agent in the dead human body, is often a deadly, and is always a dreaded poison. Yet cannibals feast on their brothers, and are none the more unhealthy for the repast, or, at all events, are not poisoned. It would be rather difficult to suppose, after the experiments of Majendie, that putrid venison could be thrown into the body by inoculation without producing poisonous effects; yet your high venison eater takes with impunity an animal diet which, in the most literal sense, may be said to have been dead and alive again. We are informed by Professor Spooner that he has administered the virus of glanders to animals, by the mouth, without any harm whatever resulting. But a point of this virus inserted into the flesh is sufficient to propagate the disorder in all its virulence.

The contemplation of such subjects as those we have thus briefly sketched out suggests, doubtless, various perplexities, and the idea of an amount of work which must be anything but pleasant to the superficial and idle. Still, from what is known, little can be said at present regarding any of the difficulties referred to. Smallpox, in a modified form, may be transmitted to the human subject from the cow by inoculation; by the same process, glanders may be transmitted from the horse, and rabies from the dog. These are, perhaps, the only *positive* facts we possess about transmission. Next, in their approach to a positive position, are the new and important views on the transmission of parasites. There are so many men who have agreed in observation, as in argument, on this point, and the evidence brought forward by them is so irresistible that it must be well nigh conceded as a fact in

science, that the entozoa are not only supported as a great family, but have also their diversities of race kept up by their constant migrations from one friendly animal to another.

We have evidence also that the cholera-poison, whatever it may be in nature, is a thing; we know somewhat how it moves, we conceive that it makes water its chief vehicle, that it passes off in the excretions of the cholera patient, and that its pathological, or better, perhaps, its physiological effects, are analogous to those produced by some of our more active cathartic agents.

Hitherto we have gone, and no further. Beyond is the open sea and land unknown. Whoever, setting forth towards this unknown, shall, by design or accident, make new land, need not fear for his fate in history; a new world would not be a greater discovery, nor the fame of Columbus remain without its rival. Neither need we cease to live in hope for true discoveries in this direction. We are making immense strides in physiological research, and if in these the epidemiologist shall patiently follow, his success is secure. The question of the transmission of disease by diseased food is the topic of the day, and affords a grand opening for such investigations as have been glanced at above.—*Medical Times*, April 11, 1857.

ON A NEW ACARUS OF THE HORSE CAPABLE OF TRANSMITTING THE ITCH OF THAT ANIMAL TO MAN.

By MM. BOURGUIGNON and DELAFOND.

HITHERTO, the cases of transmission of the itch of horses to man has been involved in doubt. Seeing that the known parasite of the itch of horses could not live on the human species, and that the authors who have expressed themselves in the affirmative, have never demonstrated scientifically that the malady transmitted was really due to the presence of an acarus proceeding from the horse. Starting from the data furnished by entomology, we were warranted in denying to the known parasites peculiar to the herbivora, and to the horse in particular, the faculty of transmitting the itch. Observation has just enabled us to trace effects to their causes, and to explain everything.

The horse may have two kinds of itch: the first of which is due to the presence of the acarian parasite proper to herbivora, and long known, which cannot trace furrows, live on the skin of man, or transmit the contagion to him; the second, due to the presence of an acarus identical with that of carnivora, capable of tracing furrows, of transmitting psora, *and of which no one has hitherto suspected the existence.* This transmissible disease is as different in the whole of its symptoms from that which *cannot* be communicated as the parasites which cause them to differ from each other.—*Comptes Rendus*, No. 5, Feb. 1856.

ON CONTAGION AND MIASMS.

THE morbid action of matters of contagion and miasms are ascribed by Liebig to their operation as ferments. It is known that during putrefaction, at a stage prior to any fetid gas being evolved, a peculiar organic substance is generated, possessed of intensely poisonous properties, and that the blood of persons who have died from its effects is found to be quite disorganized and irritating when applied to wounds. "In order," says Liebig, "to attain a clear conception of the mode of action of these bodies, it is necessary to call to mind the cause on which the phenomena of fermentation, decay, and putrefaction depend. This cause may be expressed by the following law, long since proposed by La Place and Berthollet, *"a molecule set in motion by any power can impart its own motion to another molecule, with which it may be in contact."* A body in the act of decomposition, added to a mixed fluid in which its constituents are contained, can reproduce itself in that fluid exactly in the same manner as new yeast is produced when yeast is added to bodies containing gluten. The small quantity of diseased organic matter originally introduced into the system by absorption, *acts as a ferment*, reproduces itself in the mass of blood until this becomes unfitted for the performance of its functions, and the animal dies. The fatal effects of eating bad sausages are ascribed by Liebig to this peculiar action. Several hundred cases are known in which death has occurred from the use of this kind of food. In Würtemberg, the sausages are prepared from very various materials, such as blood, liver, bacon, brains, milk, meal, and bread, mixed together with salt and spices; the mixture is put into bladders or intestines, and, after being boiled, is smoked. When well prepared they may be preserved for months, and furnish a nourishing and

savoury food; but when the spices and salt are deficient, and particularly when they are smoked too late, or not sufficiently, they undergo a peculiar kind of putrefaction, which begins at the centre of the sausage. Without any appreciable escape of gas taking place, they become paler in colour, and more soft and greasy in those parts which have undergone putrefaction, and they are found to contain free lactic acid, or lactate of ammonia. The death which is occasioned by eating the sausages in this state succeeds very lingering and remarkable symptoms. There is a gradual wasting of muscular fibre, and of all the constituents of the body similarly composed, the patient becomes much emaciated, dries to a complete mummy, and finally dies. The carcase is stiff as if frozen, and is *not* subject to putrefaction. The poisonous property of the sausage is destroyed by boiling water and alcohol, but all attempts to discover in them any matter to which their action can be attributed have failed. There can, however, be little doubt that they exercise an action on the organism in consequence of the stomach and other parts with which they come in contact not having the power to arrest their decomposition, and entering the blood in some way or other, while still possessing their whole power, they impart their peculiar action to the constituents of that fluid. Now blood is remarkable for the readiness with which it suffers transformations; all the constituents of the animal organism are formed from it, and its nature and constitution is one of the most complex of all existing matter. Its component parts are subordinate to every attraction, and these are in a perpetual state of change or transformation, which is effected in the most various ways, through the influence of the different organs. It is a well-known fact that when blood, cerebral substance, gall, pus, and other substances in a state of putrefaction, are laid upon fresh wounds, vomiting, debility, and at length death are occasioned. It is also well known that bodies in anatomical rooms frequently pass into a state of decomposition, which is capable of imparting itself to the living body; the smallest cut with a knife that has been used in their dissection, producing in these cases dangerous consequences.

Liebig, showing in what manner these remarkable actions are to be considered in reference to the vital principle, says, "In order to explain the effects of contagious matters, a peculiar principle of life has been ascribed to them,—a life similar to that possessed by the germ of a seed which enables it, under favorable conditions, to develop and multiply itself. But our notion of life involves something more th

mere reproduction, namely, the idea of an active power, exercised *by virtue of a definite form*, and production and generation in a definite form. By chemical agency, we can produce the constituents of muscular fibre, skin, and hair, but we can form by their means no organized tissue, no organic cell. The production of organs, the co-operation of a system of organs, and their power not only to produce their component parts from the food presented to them, but to generate *themselves* in their original form, and with all their properties, are characters belonging exclusively to organic life, and constitute a form of reproduction independent of chemical forces which are subject to it. The vital principle is only known to us through the peculiar form of its instruments, that is, through the organs in which it resides. Hence, whatever kind of energy a substance may possess, if it is amorphous and destitute of organs from which the impulse, motion, or change proceeds, it does not live. Its energy depends, in this case, on chemical action. Light, heat, electricity, and other influences may increase, diminish, or arrest this action, but they are not its efficient cause. In the same way, the vital principle governs the chemical powers in the living body. All substances used for food are chemical compounds, and it is only, therefore, the chemical powers by which their constituents are held together, that the vital principle has to overcome. It opposes to the continual action of the atmosphere, moisture, and temperature upon the organism, a resistance which is, in a certain degree, invincible. It is by the constant neutralization and renewal of these external influences that life and motion are maintained.

“The greatest wonder in the living organism is the fact that an unfathomable wisdom has made the cause of a continual decomposition or destruction, namely, the support of the process of respiration, to be the means of renewing the organism and of resisting all the other atmospheric influences, such as those of moisture and changes of temperature.

“All the supposed proofs of the vitality of contagions, are merely ideas and figurative representations, fitted to render the phenomena more easy of apprehension by our senses, without explaining them. These figurative expressions with which we are so willingly and easily satisfied in all sciences, are the foes of all inquiries into the mysteries of nature; they are like the *fata morgana*, which show us deceitful views of seas, fertile lands, and luscious fruits, but leave us languishing when we have most need of what they promise.”—*From Noad's Lectures on Chemistry.*

THE VETERINARIAN, MAY 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE APPREHENDED MURRAIN.

THE profession, we feel assured, will be gratified on being informed that Professor Simonds, accompanied by Mr. Ernes, M.R.C.V.S., started for the Continent, on the 9th ult., in compliance with the resolution of the Council of the Royal Agricultural Society of England, recorded elsewhere; bearing with him a letter of introduction from the Secretary of State for the Foreign Department, the Earl of Clarendon, to the different English Consuls, requesting them to facilitate his inquiries by giving him all the assistance they could in his investigations as to the nature of the above disease.

Doubtless, it is one respecting which the utmost apprehension, amounting to alarm, prevails in the public mind at the present moment; this arising from its great importance whether viewed professionally or commercially. It may be, that the fears raised are exaggerated. We hope they are, for it is a fact, that we are more alarmed at epidemics or epizootics, when at a distance, than when they are among us. Yet it behoves us to take every means to prevent their outbreak or introduction, and we cannot but think that the steps taken for this purpose are judicious.

In proportion to the importance of the subject, so will be the anxiety with which the public will wait for Mr. Simonds' report. It is quite possible that much conjecture exists as to the true nature of the malady, but of its ravages there can be no doubt. Of this proof is given in the communications by Mr. T. W. Mayer, in the present number, which will be read with interest by the members of the profession, and also others.

The public press and the medical journals, have of late contained many articles of considerable value, both as it

respects the history of the disease, and its probable consequences, and offering suggestions of a prophylactic nature. To these we must refer our readers. We adopt one from the leading daily journal.

“Precautions have at length been taken against the introduction into England of the infectious disease which is destroying the cattle of the Baltic countries. An Order in Council was published on Saturday, prohibiting the importation of cattle, or of horns, hoofs, hides, or skins, from those territories of Russia, Prussia, or Mecklenburg-Schwerin which lie on the Gulf of Finland, or between the Gulf and the city of Lubeck. It cannot be said that this prohibition is too stringent, or comes too early. Certainly an order which limits the supply of human food is a strong measure, but the case admitted neither of compromise nor delay. It was necessary to exclude rigidly and at once anything which could bring on the country so terrible a calamity as a mortality among the animals used for food. The disease which has necessitated these precautions has ravaged Silesia, Mecklenburg, and part of Holstein for two or three years, and has latterly assumed a type so deadly as to rouse the apprehension of the principal Governments of the Continent. The Governments of France, Prussia, and some of the smaller German States have already made regulations for the exclusion of the tainted cattle, or any part of their carcasses. Our insular position gives us greater chance of immunity, but does not free us from the necessity of taking some precautions.

“The exclusion of cattle coming from Baltic ports will, no doubt, tend to raise in some degree the price of meat, but this evil is not for a moment to be balanced against the deliverance from the scourge of murrain within these islands. The importations from abroad, though they seem large in returns, form but a very small part of the supply necessary for the population. England and Ireland are pre-eminently grazing countries; the meat they produce is far superior to that of the Continent, and the quantity beyond all comparison greater than anything that the German ports can

furnish. In fact, this country is, after all, mainly supplied by the produce of its own territory. It is therefore sound economy to take any steps which may tend to preserve our herds and flocks untainted. Temporary dearness of meat, of leather, or of tallow, is but a small evil compared with the introduction of a malady which may sweep off thousands of our cattle from Hampshire to the Highlands, and perhaps after ravaging the country for years together end by permanently deteriorating the various breeds. In our damp climate, where a large supply of animal food is necessary for keeping up health and strength, the consequences of such a calamity as a general destruction of animals can hardly be contemplated without the deepest apprehension. No such event has happened in our own day, or even in the present age, but in former times such disasters were far from uncommon; and in the last century Europe was more than once swept by murrains which destroyed the animal food of entire nations. We think, therefore, that the Government has only done its duty in prohibiting all importations from the infected districts.

“ But there is probably more to be done than merely to search Baltic traders for cattle or hides. This disease, no doubt, has its causes and its cure, like those of human kind. The words ‘infectious’ and ‘contagious’ are very loosely used. It is probable that this malady is propagated chiefly where the state of the animals is generally unhealthy, or where, through want of proper care, or through insufficient food or shelter, their physical condition is weak. We may further assume that a disease of this sort is epidemic, and likely to break out in more than one place, without any intercommunication. Both these considerations point to the necessity of increased care in the treatment of cattle at home. It is not impossible that the disease arises from natural causes, and cannot be averted solely by quarantine regulations. No doubt, infection from abroad would cause it to assume a still more deadly form, but yet the seed may be already sown among us, and favorable circumstances may cause it to take the dimensions of a great national calamity.

Our agriculturists and breeders should therefore take their precautions in time. While Government is watching the out-ports, they should do all that science can suggest to stop the progress of the disease, or remove the causes which may lead to its appearance. If the crowding of cattle-sheds and the want of ventilation and cleanliness have a tendency to encourage the epidemic, as certainly seems likely enough, no time should be lost in remedying defects which may be productive of such incalculable evil."

THE ANNIVERSARY MEETING OF THE PROFESSION.

PRESS of matter allows us to do little more than to direct the attention of the profession to their Annual Meeting, advertised to be holden on Monday, the 4th of May.

"Vis unita fortior" is the motto of the College of Veterinary Surgeons, and in every sense, it is desirable that it should be realised by us as a body. Hitherto, it must be confessed, there has not been amongst us that union which gives strength. Indeed, the anniversary meetings have rather shown our disunion and weakness by the fewness of the members present; which is doubtless attended with feelings both of disappointment and discouragement to the Council, for they know not what to attribute this to; whether to apathy, dissatisfaction, or satisfaction. They would fain hope it is the latter; but they would prefer that some other mode of expressing it were adopted. Silence and absence admit of two constructions. "Divide et impera," was a Roman maxim. Let it not obtain among us. Let not the enemy gain the 'vantage ground. Division is as much a proof of weakness as union is of strength.

We have long been of opinion that occasional *réunions* tend not only to awaken kindly feelings among the members of our profession, but to cement them more firmly together; and we would that means were devised by which they could take place more frequently.

We believe that the council of the Royal College of

Veterinary Surgeons have at last acted prudently, and we hope timely, in conceding to the wishes of the schools, by lowering the examination fee. We do not think it was wise on their part, at the onset, to go to the utmost limits which their Charter allowed them. It would have been better gradually to have reached this point as circumstances called for it. Acting as they did, it necessarily awakened the inquiry, What is gained for the payment of so large a sum? What are the privileges and advantages derived?

It is true that, for a very long time past, the only means of support to the College have been the fees obtained from the candidates for examination, and these principally of one school. Had the opposite course been adopted by them, it is more than probable that much of the unpleasantness which has prevailed would have been prevented, and the funds too would have been richer than they now are. Or what if a system of rigid economy had been resorted to at first. Must it not come to this?

We will, however, hope for the best. For a time, unquestionably, a pecuniary loss will be sustained by the College, but if in the end that be attained which may now be fairly anticipated, namely, a cordial union between it and the schools, permanent good must be the consequence to the profession, since we are told, "a threefold cord cannot be broken." Let us then, at the forthcoming meeting, be found strengthening each other, and also the hands of the council, by being there in unprecedented numbers. There is much at the present time to awaken considerations in a professional point of view; much upon which there should be a oneness of mind and of sentiment; an important matter respecting which considerable information has to be acquired, and nothing tends so effectually to accomplish all this as a free interchange of ideas, where each communicates and each receives; for the imparting of knowledge is "like mercy, twice blessed. It blesses him that gives and him that takes."

May the anniversary meeting of the profession for 1857 be hereafter referred to as the most numerously attended, the most united, the most interesting, and the most beneficial of any that ever took place!

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY COUNCIL MEETING,

HELD WEDNESDAY, APRIL 8, 1857.

PRESENT:—The President, Messrs. Braby, Burley, Constant, Dickens, Ernes, Field, Jex, Jones, Langworthy, Legrew, M'Kenna, Robinson, Silvester, Turner, Wilkinson, Withers, Professors Spooner, Simonds, Morton (Treasurer), and Varnell, and the Secretary.

W. STOCKLEY, Esq., the President, in the Chair.

The minutes of the previous meeting were read and confirmed.

On the motion of *Mr. Jones*, seconded by *Mr. M'Kenna*, it was resolved that the Annual Dinner should be held at Radley's Hotel, instead of at Freemasons' Tavern, as heretofore.

A 'Treatise on the Therapeutical Effects of Purgatives on the Horse,' by Mr. John Field, was presented to the library by the author, to whom, on the motion of *Mr. Ernes*, seconded by *Mr. Robinson*, the thanks of the Council were accorded.

The Treasurer's quarterly report, showing a balance in hand of £260 14s. 9d., was read and received, on the motion of *Mr. M'Kenna*, seconded by *Mr. Ernes*.

The Registrar's report announced two deaths, Robert Dods, of Kirkaldy, who passed 1826, and William Huke, of the Royal Artillery, who passed 1838.

Mr. Burley moved that Mr. Jex and Mr. Legrew, with the Secretary, form a committee to prepare the annual report.

Professor Morton seconded the motion, which passed unanimously.

On the motion of *Mr. Jones*, seconded by *Mr. Jex*, Mr. Ellmore and Mr. John Henderson were appointed auditors of accounts for the present year.

The Treasurer was authorised to draw cheques for various sums, amounting to £44 14s. 8d.

A SPECIAL MEETING

Was held, the same gentlemen being present, to consider two motions, of which notice had been given.

Mr. Ernes moved, as an alteration of bye-law 27, "That

each candidate, fourteen days prior to his examination, must deliver to the secretary a certificate, or such other legal proof as may be required, of his having been educated at some of the recognised colleges or schools, with a fee of five guineas for examination, and a fee of two guineas for admission and registration."

Mr. Jones seconded the motion.

Mr. Robinson considered that the future welfare of the College greatly depended on the adoption of the proposed reduction of the examining fee. There might be a temporary diminution of funds in consequence, but the College would soon recover from that difficulty.

Mr. Field said, if he stood alone, he should oppose the reduction.

Mr. Legrew believed that the status of the profession would be lowered with the reduction of the fee; and that a person who could not afford ten guineas for his son's examination, was not likely to be in a position to give him the education which, as a veterinary surgeon, he should possess.

Mr. Langworthy considered that the proposed change ought not to be made without giving the members of the College generally an opportunity of expressing an opinion on the subject, and therefore moved that a special meeting be called for that purpose. The motion, however, was withdrawn (under protest), on an intimation from the chair that it could not be legally put.

Mr. Burley said the College would become bankrupt by giving up so large a proportion of its funds; and the reduction was unnecessary, because uncalled for on the part of the pupils. There was no other profession of which a young man could become a member for so small a sum as thirty guineas; and no pupil would be deterred from entering for the sake of three guineas. But if the professors were desirous to reduce the amount, they could lessen the educational fee from twenty to fifteen guineas.

Mr. Braby thought that the reduction of the fee by a paltry three guineas, could be no benefit to the profession, and he could not see a single reason to induce him to support the proposition.

In answer to *Mr. Wilkinson*,

Mr. Robinson said, the object of the motion was to place the London school in the same position as that in which the Council were anxious to place the Edinburgh school, and would have placed it but for the statement of Professor Dick, that he should not consider himself bound to send his pupils to the London Board.

Professor Simonds said the Council was willing to make the reduction to conciliate Professor Dick, but unwilling to do anything to secure the adhesion of the Royal Veterinary College. The consequence was, that the Veterinary College was about to do what Professor Dick had done. The difficulty was one of the Council's own creating.

Mr. Turner, while opposed on principle to the reduction of the fee, would give his consent to it for the sake of preserving harmony, and conciliating the parent institution.

Mr. Dickens expressed a similar view and intention, adding that he thought the educational fee ought to be increased rather than decreased, as suggested by Mr. Burley.

Professor Morton believed that the very existence of the College depended on the adoption of the proposed reduction, although he was not favorable to it, since both the army and the East India Company would continue to appoint those who were not members of the corporate body; and there were other well-known cogent reasons.

Professor Spooner, after expressing his regret at the divisions which had taken place among the members of the profession, contended that if ten guineas was too high a fee for the Scotch pupils, it was too high for the London pupils, and urged that, by consenting to the reduction, the council would place itself in a right position in reference to both schools.

Mr. Wilkinson opposed the motion, and expressed his opinion that the governors of the College at St. Pancras were taking a false step.

Mr. Jex supported the motion, in order to prevent the further division of the profession, which would be brought about by the establishment of a St. Pancras Board.

Professor Spooner said, the governors, if the concession were granted, would be anxious to join the council, and do all in their power, as they had hitherto done, to uphold the profession.

Mr. Gabriel said, he should vote for the reduction, but with the full feeling that he was paying an enormous price for conciliation.

Mr. Ernes said, if his motion were rejected, they would be split into three bodies; and nothing would be more likely to injure the College than the establishment of an additional board.

The motion was then put from the chair, and the numbers were—

For the motion	14
Against it	7
Majority in favour of the motion .	— 7

It was then resolved, on the motion of *Mr. Gowing*, (proposed in his absence by *Mr. Varnell*), seconded by *Mr. Ernes*, "That any candidate failing to obtain his diploma after two examinations, shall pay a further fee of three guineas, on again presenting himself before the Board." Carried unanimously.

Messrs. Legrew, Jex, and the Secretary, were named as the committee of supervision, and the proceedings then terminated.

JOHN LEGREW.
THOMAS JEX.
E. N. GABRIEL.

SPECIAL MEETING, APRIL 22, 1857.

PRESENT:—The President, Messrs. Braby, Gowing, Jex, Jones, Langworthy, Legrew, Turner; Professors Spooner, Morton, and Varnell, and the Secretary.

W. STOCKLEY, Esq., the President, in the Chair.

The Minutes of the preceding meetings were read and signed.

Mr. Ernes' motion for an alteration in the bye-law 27, reducing the fee for examination and admission from ten guineas to seven, was, on the motion of *Mr. Jones*, seconded by *Mr. Jex*, confirmed. As was also *Mr. Gowing's* motion, that pupils after two rejections, should pay an additional fee of three guineas.

The annual report and balance-sheet were then read, and, on the motion of *Mr. Braby*, seconded by *Mr. Jones*, they were unanimously received and adopted.

It was moved by *Professor Morton*, and seconded by *Professor Spooner*, "That the thanks of the Council be given to the Committee for preparing the Annual Report." Carried nem. con.

E. N. GABRIEL.

PRESENTATION OF A TESTIMONIAL TO PROF. MORTON, ROYAL VETERINARY COLLEGE.

To the Editors of the 'Veterinarian.'

GENTLEMEN,—The Committee appointed to carry out a resolution of the Students of this Institution, namely to present a Testimonial to Professor Morton, will feel obliged by your giving insertion to the following in an early number of your Journal.

I am, gentlemen,
Your obedient servant,
WALKER WATSON,
Secretary to the Committee.

R. V. C.; April 12, 1857.

A very general desire having been expressed by the Students of the Royal Veterinary College to present a testimonial of respect to Mr. Morton, Professor of Chemistry and Materia Medica, a meeting of them was convened, and the following chosen as the Committee of Management:

Chairman—Mr. JAS. IRVINE LUPTON.

Mr. F. B. Jones	Mr. Walter Burt	Mr. J. Ferris
— H. Flower	— E. Rogerson	— W. J. Challiner
— J. Wattam	— G. A. Drewe	— W. Branford.

Treasurer—Mr. Wm. Field.

Secretary—Mr. Walker Watson.

All having been satisfactorily arranged, a full meeting of the pupils and their friends, to which the professors of the College were invited, took place in the Lecture Room of the institution, on Wednesday the 9th of April last.

On the table was placed the Testimonial, which consisted of the accompaniments to a Breakfast Service, all in silver. The principal piece, the Chocolate-pot, bore the following inscription:

PRESENTED TO

W. J. T. MORTON, ESQUIRE,

PROFESSOR OF CHEMISTRY AND VETERINARY MATERIA MEDICA,

BY

THE STUDENTS OF THE ROYAL VETERINARY COLLEGE,

IN TESTIMONY OF THEIR HIGH APPRECIATION OF HIS TALENTS AS A
TEACHER, AND OF HIS CONTINUED ZEAL IN PROMOTING THEIR
BEST INTERESTS, AS WELL AS THEIR SCIENTIFIC ACQUIREMENTS.

SESSION, 1856-7.

Mr. Lupton having taken the chair, said—Gentlemen, at the early part of the session, a suggestion was made that some token of respect should be presented to our talented professor now occupying the chair of Chemistry and Materia Medica. This suggestion at once found favour amongst the students, who unanimously agreed, that a service of plate should be presented to him. My brother students have done me the honour to elect me their chairman, thus making me their representative on this occasion, and imposed upon me a duty which I feel it difficult to discharge, that of expressing, in appropriate language, their views and feelings towards the person whom it is their delight to honour. But thus called to office, I will endeavour to perform its duties to the best of my ability. Professor Morton is not merely known in this college as our esteemed and talented lecturer, but he is also known in the scientific world by his writings and discoveries; and should he never give another lecture, or write another book, he has already done enough to cause his name to be for ever remembered. Professor Morton is thoroughly a chemist. The subjects of his lectures seem to engage his chief thoughts, and to call forth the energies of his mind. His very leisure he makes subservient to the duties of his official position. When he visits the continent of Europe, or other places, which he does most summers, he returns with some information altogether new, or some new view of an old subject, which it is his delight to communicate to his pupils in this theatre, and which it is equally their delight to hear explained and see exemplified by him. There is a fascination about all he says, which rivets the attention of the student. This may be owing to his extensive reading, and well-stored mind. For not only do subjects kindred with chemistry naturally occupy his thoughts, but he seems, from the tone of his lectures, to have a great relish for poetry, and he not unfrequently quotes passages from our best writers, if not to illustrate, at least to add a grace and an elegance to the subjects on which he treats. I am sure that you, my fellow-students, wish as I do, for the continued welfare of this college, and equally rejoice with me at its increasing reputation, allied to it as we are by our voluntary choice. And what do we see in Professor Morton? Why, a chemist, who occupies a very conspicuous place; and who has chosen this institution as the arena in which to exercise his art, and the centre from which his fame is to spread. And here we are assembled, the teachers and the taught, to express our feelings towards him. Is it not an honour to this institution,

that from a gentleman, one of ourselves, light should issue to enlighten the world of science? This college then is evidently doing something to promote those high purposes for which it was established, and the lustre of the place being reflected, gilds us all. As we are all honoured in our professor, it is our duty therefore to honour him; and we present our offering as a testimony of our gratitude, and as a token of the esteem in which we hold him, and the high opinion we entertain of him.—Mr. Professor Morton, it is my pleasing duty, on behalf of my brother students around me, to present you with this Service of Plate. May you long live in honour and happiness, and may God continue to give you health and strength, so as to enable you for many years to come to discharge the duties of that important office which you now so faithfully and efficiently occupy.

Professor Morton, in reply, spoke to the following effect:

He knew not a more honorable nor a more enviable position in which a teacher could be placed, than that in which he then stood. Nor was it for the first time with him, this being the ninth testimonial he had publicly received from the students of the College. When their intention was intimated to him, his conscience asked him what he had done to merit this repetition of their kindness? And the only reply he could make to it was, that he had endeavoured to perform the duties of the situation in which Providence had placed him, and they had been pleased to accept the will for the performance of the deed. There was, however, one object which he had kept steadily in view during the long period he had been connected with the Veterinary College; it was that of promoting, as far as he was able, the onward march of the profession; and this he always thought could be best effected by studying the interests of the students, and aiding them in their acquirement of knowledge. On this account he had very early attempted to fill up an hiatus which existed in their studies. He did not like their having to go from “Dan to Beersheba” to get information on the principles of chemistry, as applied to veterinary science, and the medicines to be employed by them in their future practice. Nor was it consonant with the dignity of the College that it should be so, although those teachers who had so freely opened their schools to the admittance of the veterinary student, for ever merited the thanks of the profession as a body. Humble, indeed, and accompanied with some fears as to the results, were his beginnings, but he had from the very onset met with much kindness and encouragement from his pupils. This had

been to him a stimulus to continued exertions ; and although he could not now say that this expression of their kindness should excite him to an increase of his efforts, yet this he would say, that the same course of conduct which had called forth this munificent expression of their feelings towards him, should be still persevered in. He accepted their present with gratitude ; and cold and flinty must that heart be which is not warmed by a manifestation such as this. It has been well said by Buchanan, that “ the acts of young men are sincere and honest, for they are not yet contaminated by the ways of the world, nor have they learned to dissimulate and play the hypocrite.” From him they could expect but little in return. His was, perhaps, the least esteemed, but it was not the least important division of their studies. There was much that remained as yet hidden in its benefits to them, for it was in their after life that they would appreciate the value of the principles now inculcated by him.

“To you, Mr. Chairman,” Mr. Morton continued, “my best thanks are due for the courteous manner in which you have expressed the sentiments of your fellow-students towards me, and I would that I merited all that you have been pleased to say. I have also to thank you for your consideration in consulting my wishes respecting the nature of the testimonial. And this leads me to add a few words as to the character of the presents it has been my good fortune to witness made here, both to my colleagues and to myself, which have always been judiciously chosen and gratifying. They have consisted either of scientific and useful articles, or been connected with the refreshing beverages of tea and coffee. There have been no punch-bowls, nor drinking-cups, no claret-jugs, nor wine-coolers, no symbols of conviviality, but rather those of sociality. Now what influence the ladies have had here I cannot take upon myself to say—

Those dear delightful tyrants, to whose sway
All must submit themselves in this our day,
Altho' *they* said 'Love, honour, and *obey*.'

But my brother professors are all married men, and they, perhaps, will inform you ! Yet this I know, I labour under a great disadvantage here. I cannot tell you how your handsome present will be handed down as an heirloom in my family ; how prized it will be by those I love ; how, when morn unbars the golden East, or day dies like a dolphin, its last fair colours, “ purest, brightest, best ;” or should it be in winter time, when night has early curtained in the day,

and the peaceful evening has set in, thus described by Cowper—

“ Now stir the fire, and close the shutters fast,
Let fall the curtains, wheel the sofa round,
And while the bubbling and loud-hissing urn
Throws up a steamy column, and the cups
That cheer, but not inebriate, wait on each.”

How then, like them, with youngest on the knee, I shall point to the glittering service, tell how it was obtained, and urge him to the correct performance of his duties throughout life—

For alas ! no wife with me
Will share my cup of tea,
In happiness or misery ;
No teasing brats climb on my knee
In frolicksome hilarity,
Upsetting my bohea,
And with it my urbanity.

But “ alone in my glory,” the “ monarch of all I survey,” both at rosy morn and dewy eve, I shall be reminded of your kindness. Nor shall I, I trust, forget the debt of gratitude I owe to Him who has given to me the few talents I possess, which being exercised, have proved to you beneficial. This has been my end and aim. And may it be yours to finish the short race of human life with honour and applause, and afterwards to receive the reward, which is not of debt, but of grace, remembering that

“ Life is real, life is earnest ;”

and in proportion as you comport yourselves, so will you be esteemed by the wise and good.”

The company subsequently retired to the Board-room of the College, and partook of refreshments.

PRESENTATION OF A TESTIMONIAL TO MR. HALLEN, VETERINARY SURGEON.

ON Friday, the 3d inst., at a meeting in their Class-Room, of the Students of the Edinburgh Veterinary College, and in presence of Professor Dick and a select number of

friends, Mr. Hallen was presented with a valuable Microscope, bearing the following inscription :

PRESENTED TO

JAMES HERBERT BROCKENCOTE HALLEN, Esq.,

VETERINARY SURGEON, 1ST BOMBAY LIGHT CAVALRY (LANCERS);

FELLOW OF THE ROYAL PHYSICAL SOCIETY, EDINBURGH;

AND VICE-PRESIDENT OF THE EDINBURGH VETERINARY MEDICAL ASSOCIATION;

BY

THE STUDENTS OF THE EDINBURGH VETERINARY COLLEGE,

AS A TOKEN OF ESTEEM, AND IN GRATEFUL ACKNOWLEDGMENT OF
THE GENERAL INTEREST HE HAS TAKEN IN THE ADVANCEMENT
OF THEIR STUDIES.

EDINBURGH, 3RD APRIL, 1857.

Mr. Strangeways was selected by the students to present the testimonial, which he did in a very appropriate address, to which Mr. Hallen made a most impressive and judicious reply. The value of the testimonial is indescribably enhanced, that it did not emanate from extraneous influences, but was spontaneously and unanimously bestowed by the whole class, amounting to upwards of a hundred; and such a gift becomes the more graceful and gratifying, from being conferred upon an old alumnus of the same college, to which the students themselves belong, the one from which Mr. Hallen holds his diploma. The token is not less creditable to the donors than to its recipient; to the former as expressing their feeling of acknowledgment for the gratuitous and warm interest Mr. Hallen has taken in the promotion of their studies, and to the latter as testifying how highly his services in advancing veterinary science are publicly appreciated.

JAMES M'CALL, *Secretary.*

Veterinary Jurisprudence.

Before Mr. J. K. BLAIR, Judge of the Salford Court of Record.

A DOG CASE.—BERRY *v.* BRISCOE.

THIS was an action in which Percival Berry, attorney, 7, Union-court, was the plaintiff, and Bennett Briscoe, veterinary surgeon, 102, Islington, was the defendant. *Mr. Hime* appeared for the plaintiff, and *Mr. Almond* for the defendant. The action was brought to recover £10 10s.,

the alleged value of an Italian greyhound which had died whilst under the care of the defendant.

Mr. Hime, in opening the case, stated, that whilst the plaintiff was absent from home, on the 9th of January, a favorite dog, an Italian greyhound, belonging to him, took it into its head to jump through a window, by which it cut its foot. The servant unadvisedly put the foot in hot water, which caused it to bleed profusely, and the dog was then taken to the defendant. The plaintiff, upon his return, went to see the dog, and being much acquainted with dogs, at once perceived that the wound was very slight, but the defendant suggested that it would be better to allow the dog to remain there for a few days, as the wound might open again.

On the Friday following then, *Mr. Berry* sent for the dog, and the defendant sent back an account for "medicine, attendance, and keep of a dog, £2 2s."

The plaintiff then went over to the defendant, thinking there might be some mistake in what he considered an exorbitant charge; but the defendant insisted that that was his charge, and he would not take £1 1s., which the plaintiff offered him. The plaintiff also offered to refer the matter to some other party skilled in such matters, and if he found that the defendant's charge was not exorbitant, he would pay it; but the defendant refused to be bound by such a condition, or to give up the dog unless he received his £2 2s.

Subsequently, not being able to get the dog, the plaintiff sued the defendant in the County Court for it, and then the defendant sent in a further claim of 5s. per week for keeping the dog, making together £4 4s. for the dog. This was refused, and ultimately the dog died whilst under the care of the defendant.

A post-mortem examination was made, and the dog was found to have died from excessive cold acting upon the heart.

Margaret Thomas, a domestic servant in the employ of the plaintiff, said she took the dog to the defendant's, when he said it had been badly cut, and had better remain there for a day or two. When she went to complain of the charge which the defendant had made, the latter said it was his usual charge, and he would take no less.

The *Plaintiff* stated that he had offered the defendant a guinea for the treatment of the dog, and he thought that was very ample remuneration. He demanded the dog, but the defendant refused to give it up unless the two guineas were paid. He paid 27s. for the dog when it was a "pup," about 3½ years ago, at Halifax, in Yorkshire; and about three

weeks after he purchased it he was offered £5. It was difficult to say what was the value of the dog; he would not have taken any money for it, but he should think it would be worth about £10 10s.

In cross-examination by Mr. Almond—The plaintiff said the defendant told him that it had been kept in a loose box to the exclusion of a horse. He did not think the dog was thorough-bred; but £5 5s. would not be the value of a thorough-bred dog of that kind; he had known as much as £20 given for one. His dog was not a rabbit-runner.

In re-examination he said, some parties thought a cross in the breed improved the dog, and he himself was of that opinion.

Gilbert Hayes, a veterinary surgeon, said the original wound which the dog had received was very slight. It died from excessive cold acting upon an enlarged heart. The dog might or might not have died if it had been kept in a warm place. He should have considered himself very well paid for the treatment of the dog if he had got £1 1s.

In cross-examination, he said he got half-a-guinea for making the *post-mortem* examination.

James Chisnell, a farrier, said he could not state what might be called a proper charge for the treatment of the dog, but he had cured one with a fractured leg for a gentleman named Bell, and he kept it for a fortnight, for less than £1 1s.

Mr. Almond contended that the defendant's charge of £2 2s. was a proper charge under the circumstances for the treatment of the dog; and, therefore, even supposing a tender of £1 1s. had been made by the plaintiff, that would not discharge the defendant's lien, and he was perfectly justified in retaining the dog until the two guineas were paid.

The *Defendant* said the wound was an inch and a half long. It died from disease of the heart; it had not been at all exposed to cold, but, on the contrary, had been taken great care of.

Mr. Ellis, veterinary surgeon, said he thought £2 2s. a very moderate charge for the treatment which the dog had received.

John Store, who had been a dog-dealer for 20 years, saw the dog after it died, and, judging from its appearance then, he should have thought he had done pretty well if he had sold such a one for £1 10s.; he had sold a better one for less money. In buying such a dog, if he had a customer for it, he might pay 15s. for it; but if he bought it on speculation, he should only give about 10s. for it. It was not a first-rate dog, but "rather behind a second-rate" one.

George Finch, a dog-fancier for 14 years past, said he had

seen the skin of the dog in question after it died, and he thought the value of such a one would be from 30s. to £2.

His Honour said the evidence on both sides had been very conflicting; but he thought £1 1s. was sufficient for the treatment of the dog, and that £4 4s. was the value of the dog itself, and he gave a verdict to that effect.—*Liverpool Mercury*.

MISCELLANEA.

PROCESS FOR THE DETECTION OF VERY SMALL QUANTITIES OF COPPER AND LEAD.

By M. LOWENTHAL.

THE metallic solutions are evaporated to dryness; the residue is then dissolved on a sand bath, in 10 or 15 grammes of concentrated sulphuric acid. It is allowed to cool; the solution is poured into a graduated tube, and from five to eight drops of hydrochloric acid are added. If copper and lead are present, the liquid becomes turbid and whitish; but if copper exists in any large quantity the colour of the turbid liquid will not be white, but of a yellowish brown. According to the author, we can thus discover a hundred thousandth of lead and a twenty-five millionth of copper.—*Journal de Chimie Pratique*.

ARMY APPOINTMENTS.

WAR OFFICE; *April 17th*, 1857.

3d Regiment of Dragoon Guards.—Vet.-Surg. R. J. G. Hurford, from the 9th Light Dragoons, to be Vet.-Surg., vice Shaw, who exchanges.

9th Light Dragoons.—Vet.-Surg. Austin Cooper Shaw, from the 3d Dragoon Guards, to be Vet.-Surg., vice Hurford, who exchanges.

OBITUARY.

Died suddenly, at Devonport, of apoplexy of the lungs, Mr. W. Huke, V.S., Royal Artillery. He obtained his diploma in 1838, and practised for some years after at Dover. —Also, on the 23d October, 1856, Mr. George Godbold, of Woodbridge, after a long and painful illness of twelve months. Aged 42. He, too, obtained his diploma in 1838.

THE
VETERINARIAN.

VOL. XXX,
No. 354.

JUNE, 1857.

Fourth Series,
No. 30.

Communications and Cases.

ON ANÆSTHETIC AGENTS.

PHYSIC has its fashions. That system or therapeutic most in vogue to-day, to-morrow, perhaps, may be thrown into desuetude, and at length become even contemned.

When it was first proposed to induce a state of anæsthesia before surgical operations were performed, many objections were raised against it. Some of these were grounded on the unnatural condition induced in the blood and its vessels; others, on the consequences that followed the use of the agents resorted to; while the *expert* surgeon could see no necessity for them at all, the pain inflicted being but slight in his estimation, and the results always more favorable when they were not employed than when they were. He, however, was the *operator*, and not the *operated*. Few persons court the surgeon's knife, and those who have once been under it dread a necessity for its repetition. The public mind, albeit, was quickly impressed with the conviction that immunity from pain, when any operation whatever is being performed, was in every sense desirable, and catching at the relief from suffering which could be so easily obtained, they hesitated not to run the risk of all consequences, and the employment of hypnotic or anæsthetic agents became very general.

Nor were they long confined to the human subject; for as "a merciful man is merciful to his beast," so they soon became extended to the lower animals, and the veterinary surgeon is now very often called upon to employ them. It is true that with his patients the reason to be assigned for their use is not so strong as that which obtains with the human practitioner, since, not possessing prescience, they cannot be apprehensive of what perhaps may take place, or have any fears about that of which they are altogether unconscious.

“The lamb thy riot dooms to bleed to day,
Had he thy reason would he skip and play?
Pleas'd to the last he crops the flow'ry food,
And licks the hand just rais'd to shed his blood.”

Yet there is a reason, and a cogent one too, why partial insensibility should be produced in the brute, namely, the difficulty of causing an animal to lie quiet, and in one position, when confined, so that the operator may be enabled successfully to perform his duty.

It is now pretty generally agreed that no apparatus is necessary for the administration of anæsthetics to the horse. The plan adopted at the Royal Veterinary College is simple, but effective. A piece of sponge, containing from one to two ounces of chloroform, is placed in the fundus of a bladder, for the convenience of being held in the hand and preventing waste; under this is either some sheet gutta percha or oil-skin, this being sufficiently large to be turned over the bladder and the nostril of the horse. This suffices to direct the vapour, while at the same time the administrator is protected from its influence. The other nostril is allowed to remain open, so that atmospheric air may enter the lungs mixed with the anæsthetic. In from ten to thirteen minutes the horse is narcotized. For smaller animals, such as the dog and the cat, the sponge may be put in a piece of tin tubing large enough to pass over both the nostrils.

Among the substances first advocated to cause insensitiveness was ether; but whether from the high state of excitement produced by it on the system before its sedative action took place, or from the rapidity with which its effects passed off, from its being exhaled by the lungs, it soon gave place to chloroform, introduced by Dr. Simpson. Other agents were experimented on, as chloric ether, by Mr. Jacob Bell; nitrous oxide, suggested by Sir H. Davy, many years ago; and the fumes disengaged from the combustion of the *Lyco-perdon Proteus*, or common puff-ball, resorted to by Dr. Richardson; which, according to him, contains a narcotic principle, the action of which resembles that produced by tobacco, “with the addition of more decided narcotism and insensibility.” This, also, appears to have been brought about in animals quickly, and to have lasted for a long period; nevertheless, chloroform maintained its supremacy. Of late, however, from very many instances of death occurring, either from the incautious exhibition of chloroform, or the idiosyncrasy of the patient, there appears to be a disposition on the part of the human practitioner to return to the use of ether. Dr. Snow, who has given much attention to this

subject, has very lately advocated *amylen*e, which, he says, produces semi-consciousness and complete insensibility to pain. Amilen, or amylen, belongs to the amyle compounds, the analogue to which we have both in the ethyle and methyle series; the two last named being obtained respectively from sugar and wood—the first from potatoes. The compounds derived from these organic substances differ but little from each other in their relative constitution, the elements being alike in all.

Catalytic or fermentative action being induced in sugar or the potato, the elements of the one or the other unite in other forms, and give rise to an alcoholic fluid; and as a similar one results when wood is subjected to destructive distillation, the parallelism is thus rendered obvious. The metamorphosis that takes place may perhaps be better understood by observing that carbon, hydrogen and oxygen, are the ultimate elements in all; and these combining in different proportions, give rise to the different kinds of alcohol, or spirit, as it is designated.

The composition of

Alcohol obtained from Sugar is . . .	$C_4 H_6 O_2$
„ „ „ Wood . . .	$C_2 H_4 O_2$
„ „ „ the Potato . . .	$C_{10} H_{12} O_2$

The bases of these are Ethyle (C_4H_5), Methyle (C_2H_3), Amyle ($C_{10}H_{11}$).

Amylic alcohol is formed in considerable quantities during the manufacture of brandy from potatoes. Balard found it, accompanying œnanthic ether, in the volatile oil procured from ordinary brandy; and Brande says it has been detected in the spirit afforded by the fermentation of beet-root treacle, and that it is abundantly obtained from corn-spirit, in the process of rectification upon the large scale. It has been long known by the name of *oil-of-potato spirit*. The Germans called it fusel-oil. When potato-brandy is distilled, and after the greater part of the alcohol has passed over, a milky fluid results, which deposits this crude oil. This is to be washed with water, dried by means of chloride of calcium, and re-distilled at a temperature between 260° and 280° F., when the alcohol occurs in the form of a colourless liquid, having a peculiar nauseous and suffocating odour, and an acrid taste. It inflames with some difficulty, yielding a pale-blue flame. Its specific gravity is $\cdot 812$ at 60° , boils at 270° ; at 4° is a crystalline solid. Density of its vapour, $3\cdot 14$. It undergoes but little change by contact with air under ordinary circumstances; is sparingly soluble in water, but dissolves in all proportions in alcohol, ether, and the fixed and volatile oils.

It dissolves iodine, sulphur, and phosphorus. When warmed and acted on by oxidizing agents, such as platinum black, it is converted into *valerianic acid*, according to Cahours, which bears the same relation to amylic alcohol that acetic acid does to ordinary alcohol, or formic acid to wood-spirit.

Amilen, according to Dr. Snow, may be obtained by distilling this fusel-oil, or amylic alcohol, with chloride of zinc. Cahours, a French chemist, discovered it some years ago, and, it appears, procured it from the potato, or fusel-oil, by distillation with anhydrous phosphoric acid. It is a colourless, oily, volatile liquid, lighter than water, and boils at 320° , or thereabouts. It is one of the hydro-carbons, isomeric, with olefiant gas and etherine, but the density of its vapour is five times as great. Its composition is $C_{10}H_{10}$, its combining number or equivalent, 70.

The advantages derived from the use of this agent in the human subject are, that nausea and headache are not so severe after it as chloroform, nor is sickness produced by it. These reasons, however, will not weigh with us, and when it is borne in mind that a larger quantity of it is required than chloroform, although less than sulphuric ether, it becomes a question if it will ever be employed for the lower animals. Besides which it is also more expensive.

There have not been wanting those who have condemned the inhalation of hypnotic agents altogether, on account of the many fatal cases that have resulted from their exhibition. Among these is Dr. Arnott, who contends that all that can be desired, or is wanted, may be obtained by the benumbing influence of cold, since the seat of pain in all operations is the skin. For this purpose he forms a frigorific mixture, by mixing together two parts of finely pounded ice and one part of salt, which he encloses in a silken-tissue bag (a bladder would be a convenient receptacle for the lower animals), and this he lays upon the part to be operated on. In a few minutes the skin will become blanched and perfectly insensible to pricks or incisions with a knife, while the patient retains complete consciousness. It scarcely need be added, that no injurious results can be anticipated. The insensibility lasts for several minutes, and the parts quickly resume their normal condition. Cold, by some writers, is considered the only direct sedative we have, yet Shakespeare says that—

“It doth glow the cheek that it doth cool.”

This, perhaps, may be explained by what Dr. Arnott states when referring to the effects of benumbing cold: “The skin and adjacent textures immediately become perfectly in-

sensible, and this insensibility lasts for upwards of five minutes. When the heat returns, and the blood again circulates through the part, there is increased redness, but this is so far from indicating reaction or an inflammatory condition, that wounds of the skin so congealed have invariably healed by the first intention more speedily than under ordinary circumstances. The small arteries have, in fact, lost their tonicity for a time, and are thus rendered incapable of the inflammatory process."

He adds: "The principal objection that has been made to congelation, both as a remedy of disease and as an anæsthetic, is founded on the most erroneous idea, that it endangers the vitality of the part subjected to it. This unfortunate error arose from not reflecting on the essential difference that exists between a part congealed for a few minutes only, while the general circulation of the blood continues vigorous, and a part congealed for hours, with the circulation in a feeble condition, as happens in exposure to the cold of northern climates or severe winters. It is enough, in refutation of this idea, to state that when attempting it for the formation of an issue, I have never succeeded in destroying the vitality of the skin by a very long-continued congelation; nor have I ever heard of any untoward event having followed congelation in the practice of others using the remedy in the usual way."

Dr. Dauniol, of Toulouse, recommends the fumes of henbane, belladonna, and other narcotics of this class, to be inhaled rather than chloroform or ether and the allied bodies.

The *modus operandi* of these agents seems to be as yet an undecided question. There being a resemblance in their action to the effects produced by intoxicating liquors, and the substances being similar in composition, some have been inclined to view them as identical; more especially, since it has been the case that amputation of limbs and other operations have been performed on persons in a state of drunkenness, and they have been altogether unconscious of it.

Chemists have thought that the inhaled carbon becomes converted into carbonic acid, which produces its sedative action on the nerves, while the hydrogen is changed into water; both at the expense of the inspired oxygen. Dr. Snow disputes this, averring that both ether and chloroform are given off in an unchanged state by exhalation, and are detectable in the urine, and also in an amputated limb or a dead body. Somewhat confirmative of this is the fact that Mr. Varnell, assistant-professor at the Royal Veterinary College, destroyed a horse while under the influence of

chloroform, and he found the blood to smell strongly of the agent, and not to coagulate, as it usually does.

Mialhe says that both ether and chloroform act as anæsthetics, by displacing the oxygen of the blood, and hence the value of this last-named substance when inhaled to counteract asphyxia resulting from these agents.

Although we are in the habit of considering anæsthetics to be of recent or modern introduction, such really appears not to be the case. Dr. Arnott says that allusion is made to this subject in very ancient medical works, particularly to the inhalation of the fumes of the plant called mandrake, so as to cause insensibility. And an author of the seventeenth century has the following lines :

“I'll imitate the pities of old surgeons
To this lost limb, who, ere they show their art,
Cast one asleep, then cut the diseased part.”

The late Professor Sewell was wont to tell of an old farrier he knew, who always, before he operated upon a horse, introduced up one nostril a piece of sponge containing some fluid, but what that fluid was he would not make known to any one. *O! perditum arcanum.* The Turks, likewise, according to Mr. F. A. Neale, in his ‘Eight Years in Syria, Palestine, and Asia Minor,’ resorted to their employment, of which he gives the following account: “In Acre, there is a plentiful supply of Turkish veterinary surgeons; and about the most curious sight I ever witnessed, was a horse under treatment by these practitioners. First, they threw it on the ground by tying its fore feet, or hoofs, so closely together, that it became as helpless as an infant; then a tight bandage was placed over the nose and mouth, only leaving sufficient space for the animal to breathe. The Turkish pipe, containing tobacco, bang, cuscus, and other narcotics, was inserted in one of the nostrils, and a spark being placed on the bowl, the horse involuntarily inhaled the stupifying smoke, which had the effect, after a very short period, of rendering it unconscious of what was going on. Then the skill of surgery was brought into play—and the fetlock of the poor brute being laid open, a perfect hive of worms, deposited by a fly, common in some parts of the desert between Damascus and Bagdad, was duly extracted. The wound was closed up with pitch sticking-plaster, and the bands being unloosed, buckets of cold water were thrown over the horse, who quickly revived. The foot was now placed in a sling, and, a few days afterwards, so effective had been the operation, the horse was fit to pursue its daily avocations.” Thus, it seems, “there is no new thing under the sun.”

THE EASTERN CAMPAIGN.

By THOMAS WALTON MAYER, M.R.C.V.S., Royal Engineer
Field Equipment.

(Continued from p. 253.)

THE MURRAIN.

THE telegraphic dispatch from her Majesty's consul at Memel to the Earl of Clarendon, published in your last number, together with the letter from the *Times* correspondent, written from Vienna, leave little doubt on the mind, that "the real murrain or cattle plague," "rinder pest," the "loser durre," is the same disease that spread its ravages over Asiatic and European Turkey in 1855 and 1856.

Notwithstanding the precautions that are being observed in different parts of the continent against the spread of this disease, and the order in council published in our own country, I am of opinion that none of these measures will prevent the disease from reaching this country. It may not make its appearance in the severe epidemic form that it visited the East, because, in addition to the effects of climate, the cattle in this country are not exposed to that want of food and water, or the mixture of improper food, that too frequently occurs abroad, and which form the predisposing causes to the disease. But it will exist in some form I have not the least doubt, and attack in the greatest severity young stock that have been poorly kept.

In addition to the symptoms already mentioned by me, in all cases the teeth became loose; and in severe ones, where the animals survived more than twenty-four hours, ulceration of the intestines was frequently found to have taken place.

As soon as an animal was perceived unwell, if he were in a state of collapse, which was generally the case, at first

Spiritus Ætheris Nit.-et Tinctura Opii Ammoniatæ, aa fʒij.*

were given in half a pint of linseed oil; and every two or three hours, according to the size and strength of the animal, the following draught was administered, along with the

* The use of this preparation of opium, I wish to bring prominently under the notice of my brother practitioners. It is a valuable preparation, and will be found of great service in dysenteric affections, especially in calves. That which I used was made after the following formula. It may

stimulants above mentioned, four ounces more of the oil being added—

℞ Magnesiae Sulph.,
Sulphur., āā ʒiv ;
Pulv. Anisi, ʒiij.

This treatment was continued until the character of the evacuations became changed.

If the animal was not in a state of collapse, the aperient was given with the stimulant as soon as the animal was perceived to be unwell.

During the first twenty-four or forty-eight hours, the animal showed no inclination for either food or water, and required to be supported with plenty of flour gruel, thickened with starch, in the proportion of a quarter of a pound to a gallon of gruel; and injections of the same were frequently thrown up.

At the commencement of the epizootic, many animals died without having received any medical treatment whatever. In those that received a little, the food in the maniplus was so exceedingly dry, that death took place before the medicinal agents were able to act. In these cases the post-mortem appearances showed that a change was taking place, but the powers of the animal had yielded from exhaustion.

The first favorable symptom manifested was an alteration in the character of the alvine evacuations, indicated by the passage of bile. The body then became warm generally, instead of alternately hot and cold, which heat was maintained; and although the animal was unable to rise, yet the head assumed the natural position, instead of being extended on the ground. Instead of the medicine being repeated every three or four hours, it was now given at intervals of six or eight; and when the quantity of bile passed with the evacuations shewed that the normal action of the liver and stomach had commenced, Potass. Nitras, ʒij was given instead of the Sulphate of Magnesia and Sulphur, with ʒiv Oleum Lini, and ʒij Tinct. Opii Ammoniatæ. No food was allowed until it became evident that faecal matter was being voided, and

be given, in this country, in larger doses than I administered it in the East.

℞ Acid. Benzoic.,
Croci in fœno, āā ʒiv ;
Opii, ʒij ;
Ol. Anisi, ʒss ;
Spt. Ammonia Aromat., fʒxvj.

Macerate for seven days, and filter for use.

then very small portions of bran and oilcake were given. It became necessary to have recourse to tonics to bring about rumination, and for this purpose the sulphate of iron was administered, with gentian, in a small quantity of warm water, three times a day. The infusion of mint, which I alluded to in my last communication, was also exhibited, and certainly with very beneficial effects.

The debility, on recovery from the attack, was extreme, many of the animals not regaining their strength until the following spring; and many, alas! recovering only to sink under the intense cold and exposure in the Crimea.

It must, however, be remembered, that most of our cattle had suffered both from want of food and water, and that since they had been in our possession, with the exception of what grass they were enabled to get on the mountains, they had been fed on dry barley and cut straw, a most pernicious food for cattle, and one from which little nutriment can be derived by them, since the barley almost invariably passes through in its entire state, and without having in the least degree lost its germinating power.

As soon as possible, doses of sulphate of magnesia and sulphur were administered every other day to the entire flock, but without preventing the infection from spreading. The mortality, however, became rapidly diminished, and the cases yielded much more readily to treatment.

Our mortality was greater in the first instance from the want of attention on the part of those intrusted with the care of the animals. The English farriers neglected in many cases to give either gruel or medicine; the foreign superintendants to report them sick; and as all our cattle had to be driven a mile and a half twice a day to water, it was no unfrequent circumstance to have some of them drop down on the way and die. At other times they were merely drawn into the camp to die. These difficulties will always occur in all foreign land transports, composed, as ours was, of English, Poles, Hungarians, Italians, Turks, Greeks, Jews, and natives of almost every clime. By discharging some of the men, and selecting others who had obtained a little knowledge of the management of horned stock, by degrees a better order of things was at length established.

The total number of deaths from this epizootic, in about two months, was 116 out of somewhere about 500 head of stock. This mortality, I feel persuaded, would not have been so great, but for the reasons already detailed.

From the conflicting opinions that have been expressed in the different journals on this subject, I think it was wise on

the part of the Royal Agricultural Society of England to send Professor Simonds to inquire into, and report on the nature of this disease.

The primary cause of the epidemic I believe to be an atmospheric poison, which developes itself in animals already affected, from local and other causes, with a peculiar diseased condition of the blood; and when developed, it is of an extremely infectious character. The offensive nature of the evacuations, and the rapid tendency of the flesh to putrefy, renders it unsafe for human food. Although the Greeks had no objection to a slice of a dead horse, I never knew them attempt to take a piece of a diseased bullock.

The affection is decidedly of a dysenteric character, but it differs from all other forms of that disease I have seen in this country, from the rapidity with which it runs its course, and the sympathy of the brain and nerves that exists; this being almost, if not quite, as great as prevails in parturient apoplexy.

I would not have the agriculturists of this country place too much reliance on orders in Council, or the inspection of foreign animals. It is their duty not to expose their stock to either over-feeding, or the want of a sufficient supply of food. At all times they should have a good quantity of clean water allowed them. Dusty and mouldy hay or straw should on no account be given; and rock salt should be plentifully supplied in both straw-yards and sheds. To calves, that on certain farms are subject to diarrhœa, a small quantity of nitre should be administered occasionally in milk.

The houses should be kept clean and well ventilated, and all drains be open and clear. Further, at this particular season of the year, the cattle should not be turned on land where the black willow grows, the leaves of which are of a very acrid, astringent nature, and are found to act powerfully on the third and fourth stomachs after they have been eaten, which they frequently are when the shoots are young.

(To be continued.)

THE PRESENT STATE OF VETERINARY MEDICINE IN AUSTRALIA.

By R. GIBTON, A.B., T.C.D., M.R.C.V.S., Melbourne.

To the Editors of the 'Veterinarian.'

"I'll publish, right or wrong."

GENTLEMEN,—It has been frequently a matter of surprise to me that I so rarely see in any of your numbers, which regularly reach me, a veterinary communication from this portion of the world. It surely cannot be that you at head quarters are indifferent about our small but useful detachment so remotely situated; nor can it be that we forget the benefits received at your hands, and which now, to a certain extent, render us so independent. Believing you at heart to be interested in the welfare of every member of the profession, no matter where placed, we exonerate you from the charge of indifference. And whilst we deny that we are guilty of forgetfulness, we are free to confess that the same gold mania that so transfixed others had the like influence on ourselves; and we are happy in now being able to say that the chaos that was the result of this mania is fast resolving itself into something like order, and that men (although not forgetting the main object) are directing their attention to other subjects. With such feelings it is that I ask myself if it be not time that you should hear from us? And although I do not flatter myself that I can worthily supply the ellipsis, yet I know how valuable beginnings are; and, therefore, propose to furnish you with an epitome of veterinary affairs at the Antipodes; nevertheless, convinced how imperfect it will be, we ask your indulgence.

We shall make our remarks under three heads, and regret that we are obliged to do so from recollection and not from notes, (a proof of our past carelessness.) They will be as follow, viz., 1st. "Who practise?" 2d. "What we practise?" 3d. "For whom we practise?"

1. *Who practise?*

This is an inquiry of some importance, not only to our employers, but also to the profession at large, as showing who are really held in estimation here. The former must be interested for their own sakes, and the latter ought to be for the credit of our common profession. It is needless to say that the professional usurper has held sway here, and

still to a great extent does, but in a very different degree. Where has he not been found? There is, however, this distinction to be drawn,—in the earlier history of this country his acts were almost totally unopposed, a freedom seldom if ever enjoyed by the empiric in the mother country; but this state of things is fast declining. The legitimate veterinary surgeon has arrived, who has taken his place, and is beginning to be appreciated, so that the other is gradually sinking into obscurity. This change is not a sudden one. It is not because the man of science has arrived that he is appreciated, but because he has been tried, that he is so. We all know how reluctant men are to leave a beaten track and adopt a change; therefore our position has been one of protraction, but in the end it will be one of success. We by no means wish to convey the idea that there are no believers in the old system; we merely contend against its present universality. Nor do we pretend to say that they are men whom we care not to comment on, since many of them are men of standing and intelligence; and such frequently remind us of the great success of their favorite quackery. We account for this in the same way as Paley did the Parisian Miracles, “the few successful ones are recorded, the many unsuccessful ones suppressed.” Besides, when men have much to gain and nothing to lose, they are very daring. Still, on the whole, we must congratulate ourselves that their influence is passing away, and that the light of science is dispelling the dark clouds of ignorance that once almost appeared impenetrable. Furthermore, it is much to be regretted that many persons appear to live in ignorance of existing institutions; such, for instance, as the Veterinary College. Again, some—and they are not a few—seem to recognise no difference between the terms veterinary surgeon, farrier, cowleech, *et hoc genus omne*, and use them interchangeably, as meaning one and the same; and are astonished when told that the veterinary profession is a chartered body, and enjoys privileges, *cæteris paribus*, with the other professions. From these facts, it behoves us to spare no individual exertion so as to raise the profession in public estimation; not by telling others what we are and what we are entitled to, but by our acts, thus endeavouring to prove that we are what we profess to be. These feelings, I am apt to think, influence us in a greater degree here than at home; to wit, that we are more jealous of our respectability abroad, where we are comparatively little known, than we should be at home, where we are better known; and therefore it is that I feel deeply when I see any one of our profession, forgetting that he is a man of science, and entitled

to privileges, walking in a way hardly worthy of a respectable groom; but as such are only occasionally to be met with, let us hope that they form the exception, and not the rule. Here, to be short, may be found (like members of other pursuits) veterinary surgeons of different countries and qualifications—English, Irish, Scotch, German, &c.—differing in their peculiar characteristics, but generally agreeing on the broad principles of their profession. If our late Crimean campaign has fully developed the value of veterinary surgeons at home, this country has in no less a degree tended to show the capabilities of the profession when thrown into difficulties. In Australia the mere drawing-room veterinary surgeon has little chance of success. If any one comes here, he must adapt himself to the peculiar change that he has sought. To know without being able to do is futile. Money will not command even the requisite assistance. He is called upon to do things here which at home he never dreamt of; therefore, we say that the practical man, in the fullest meaning of the term, is the only one who should think of coming out. We by no means wish to imply that it is requisite, in order to succeed, to become less respectable than our home pursuits would demand; for after all, we believe it is the man that makes the place, and not the place that makes the man. In a new country like this, suddenly risen from one of partial obscurity to one of power and prominence, and where masses have been thrown heterogeneously together to assume an unexpected position, it is not to be wondered at that things have hitherto been so; but now a complete metamorphosis has taken place, and men no longer solely concentrate their attention on gold, but also direct it to other means of making money. Our handful of professionals lately made an attempt to establish an embryo society for their mutual benefit, but we regret to say that it has proved a failure. I think we generally find less unity to exist amongst a few than amongst the many. Here, too, the timorous have met with little success. Boldness and pluck have brought us here, and the same must carry us through. There is no one who has come up more to my idea of the thoroughly fitted Australian veterinary surgeon, than my friend Mr. Camble, who has established a practice of unparalleled extent, at least in this country; and this not, I believe, by means of capital, but by the more sure investment of perseverance. I am happy to have an opportunity of thus thanking him for the many benefits I have derived from being permitted to visit his infirmary, and thus to participate in the result of his experience.

2. *What we practise?*

It may be truly stated that in practice no two cases are exactly similar, and while as students we are taught to generalise our ideas, we find that afterwards we are frequently obliged to particularise and to modify our received notions on certain subjects. To no locality do I apprehend are these remarks more applicable than to Australia; for not only do we occasionally meet with cases absolutely new to us, but frequently we come across some so widely differing from those described as to be hardly worthy of the same name; and is it not in cases like these that the genuine practitioner is discovered and appreciated? Assuredly yes; for it is science alone that guides us under such circumstances. It is fortunate for the practitioner at the Antipodes that he has never to contend with those formidable, and I may say unconquerable diseases, that once were unfortunately frequent enough in Europe, but now are happily rare—I allude to glanders, farcy, hydrophobia, &c. Their absence it is difficult perhaps to account for. We hear divers speculations that it is referable to some peculiar atmospheric influence; but after all these beautiful theories we appear to be as far from the real or proximate cause as ever. The human subject equally boasts his freedom from many of the malignant diseases that once afflicted him at home. It is superfluous to inform your readers on a subject which, doubtless, they are all well acquainted with, the noted hardiness and great powers of endurance of the Australian horse. And whilst this fact ought to subject him less to disease, it has, also, in a measure rendered him more liable to it from his great powers being often overtaxed. Heretofore the domestic arrangements for the horse were of a very humble character, in fact he lived comparatively in a state of nature, and if he “ailed” Nature was his doctor; for it cannot be supposed that he did not “ail” occasionally, since man never yet brought any animal into his service that he did not to a certain extent entail some of the evils which he himself is heir to; but it is only lately we may say that the horse has engaged the serious attention of his owner. The rough and ragged coat of three years, like that of his master, is changed to the smooth and glossy one; his roofless shed, if once any at all, is now a comfortable stable: in short, he has become domesticated, and as a consequence he is subject to most of the ills that domestication inflicts, therefore is it that art now is required where Nature of herself would be insufficient. But what, you will ask, are the diseases that chiefly prevail here? I have already

told you (in the true Irish style) some of those that do not. This country appears particularly free from, both as it regards man and beast, those pulmonary affections that are so frequently met with at home. The chronic cough likewise is seldom heard. Not that I by any means wish to convey the impression that chest diseases do not occasionally occur, but they are certainly less frequently met with here than in England, and when they do occur they may, in most cases, be clearly traced to gross negligence. This, I apprehend, the warmth and genial nature of the climate fully explains. Diseases of the abdominal viscera, from the overloaded stomach to inflammation of the intestines, occur daily in our practice. And the number of such cases surprises us but little when we recollect that many persons into whose hands horses get are but little acquainted with equine economy. Men come out here who, to speak vulgarly, hardly know a horse's head from his tail. These we find carrying on at the "diggings" a good speculation by spending their money in horses for the purpose, and then their ignorance often obliges them to refer to the "doctor." Besides this the variety of the provender used, and injudiciously used, often becomes a cause of these diseases. Ophthalmia and other affections of the eyes are by no means rare here; neither is laminitis. Hard work on some of the hot roads, coupled sometimes with the bad shoeing to be met with in the interior, furnishes us with the reason for this. I have had several well-developed cases of sun-stroke during the hot season: such generally yield to prompt and energetic treatment. I think I have seen less of spavin in this country than at home. If so, why? Accidents of a serious character annoy us much in practice; I say annoy, because of their frequent unsatisfactory termination. I have portions of the shafts of vehicles of all kinds and dimensions that I have taken from all parts of the body. Where death does not close the scene at once, and Nature bids fair for a cure, we are often not allowed the time that would effect it, from the great expense that would be incurred. The rapidity with which horses are broken in here, and the number of bad drivers, &c., sufficiently account for these calamities. I have found wounds of all kinds more difficult to heal than I experienced when in practice at home. In the use of purgative medicines I soon discovered I could not adhere to my usual doses; increased quantities to produce the same effect appearing to be called for. The union of gentian with aloes (acting on the suggestion of some Indian military veterinary surgeon, whose name I forget) I have found of much benefit. Will not the greater action of the skin in tropical climates

account for the necessity of these larger doses to produce purgation? Venesection I rarely have recourse to; indeed there appears to be a prejudice against it everywhere, and I believe it is less resorted to than formerly. Short cuts and great promptitude are specially called for in the treatment of disease in this country. This must be the case for the sake of most of our employers; since they tell us, "if my horse be not ready to go to work in three, four, or five days, I'll turn him out, and let him take his chance;" therefore, "round-about ways" and the usual course of treatment have to be avoided, and I have seldom seen a bold practice a bad one. Before dismissing this portion of my subject, may it not be reasonable to suppose that there are plants indigenous to this country that might be made available in the cure of diseases that are specially prevalent here? Hence the desirability of botanical knowledge; and I hope the day is not far off when it will become a necessary branch of the veterinary surgeon's education. Of its importance there can be no doubt. At all events, better to possess it than to be without it, for, as Professor Morton used to say, "knowledge is no burden."

3. *For whom we practise.*

In no country, perhaps, on the face of the earth are the representatives of all nations more commonly to be found than in Australia. Here are to be met with the plodding John Bull, the cautious Scotchman, the impulsive Irishman, the vivacious Frenchman, the boasting Yankee, the chattering Chinaman, and others; and all these we have to do with more or less in practice. What is generally understood by the lower order at home is a class very different here; in fact, they are our chief and best paymasters. They work hard, are well paid, and pay well in return; indeed, I generally find that those whose livelihood is gained by the employment of horses are our most satisfactory clients. Many of those who keep horses for their amusement merely, or luxury, are apt to think their keep a sufficient extravagance, and, therefore, employ us with reluctance. Many of the characteristics of the working classes become developed as they become independent. The transition from a state of oftentimes abject dependence to a place where their energies have full scope produces this; but, unfortunately, they seldom attain the desired mien. We would like their motto to be, "Neither servile when dependent, nor overbearing when the reverse." The John Bull of this class requires his twenty shillings' worth of cure for his pound; Brother Jonathan comes to us, but "guesses"

he knows as much as we do. The very lowest order of my own countrymen, I regret to acknowledge, are often most unsatisfactory customers to deal with. From their youth upwards unaccustomed to the possession of money, they suddenly acquire wealth, and are ignorant in the disposal of it; being foolishly extravagant sometimes in unnecessary things, they are close in the procuration of those that are necessary.

On reading over these pages, I had nearly resolved not to send them, and that for two reasons: first, I find I have written so much, and yet told you so little; secondly, on account of the incoherency of the style. But as all bad writers give reasons for their mistakes, I give mine, and they are genuine. 1st, I write in the midst of business; 2dly, under the disagreeable influence of hot winds. In conclusion, I have often thought, since I have been abroad, how valuable students ought to consider their college days; for the time may come, as it has with myself, when they will be debarred the advantage of consulting the heads of the profession. For when I thought it would have been my lot to have been associated in a veterinary capacity with the

“Pomp and circumstance of glorious war,”

I then knew that I could occasionally enjoy these privileges. It is, however, otherwise now, being sixteen thousand miles distant. It therefore behoves students, not knowing under what circumstances they may be placed in after life, to be careful of their time, as it can never be recalled; and to let “your instructions live within the book and volume of their brain, unmixed with baser matter.”

I remain, Gentlemen,

Yours very truly.

CHRONIC AND RECURRING DIARRHŒA, ACCOMPANIED WITH ŒDEMA AND DEPILATION.

By J. CARLESS, Jun., M.R.C.V.S., Stoke-upon-Trent.

ABOUT the end of the year 1855, I was called in to examine and prescribe for a bay gelding, of the hackney breed, belonging to E. B. Hamill, Esq., of Tamworth.

The complaint he was then labouring under was diarrhœa; and, on learning the history of his case, I found that he had

for some time previously been running about in a low and rather bleakly situated meadow, and allowed free access to a rick of mouldy hay; causes quite sufficient to account for the functional derangement of the bowels then present. I ordered him to be at once taken into the stable and placed upon a nutritious and wholesome diet, of which he partook with avidity; in fact, his general health was not in the least degree impaired. His owner was anxious to see his digestive organs restored to a healthy condition as soon as possible. I therefore submitted him to the preliminary preparation for a mild dose of cathartic medicine, deeming it advisable to empty the "*primæ viæ*" of anything pernicious or irritating that it might contain; and this having been done, I gave him a ball, every day for a week, consisting of vegetable, astringent, and tonic agents; after which, his alvine evacuations became of a natural consistency, but did not long remain so, for, although his work was light and easy, his food good and regularly apportioned to him, his stable well ventilated and of moderate and uniform temperature, he had many returns of this debilitating disease, and at length it assumed a chronic and incurable form. In this state the animal continued until the autumn of 1856, when my attention was again directed to him, in consequence of a very remarkable change having taken place in his system, a change that gave a peculiarity to his case that I have never met with or heard of in any other animal, and one that I think deserves recording for its singularity.

Without the slightest alteration of food or treatment, his purging suddenly and spontaneously ceased, and his *fæces* became solid and of the usual character. At the same time, a considerable swelling of the extremities took place, accompanied with most extensive eruptions of the skin and falling off of the hair; and to such an extent did this proceed, that in a few days his legs, from the body to the feet, were nearly denuded of their natural covering, and presented a most unsightly surface, the skin being bedewed with an adhesive discharge, or albuminous and bloody, and accompanied with intense itching; in other respects he seemed very little amiss, his appetite remaining good, and his respiration and circulation undisturbed.

After seriously revolving in my mind the origin and progress of this strange and protracted disorder, I concluded that medical treatment would be a long time in bringing back his vitiated constitution to a state of health; I therefore advised his owner to turn him out for a few weeks, and try the effect of that upon him. I saw him again in a fortnight;

the swelling of his legs was then quite gone, and the skin had nearly recovered its entire and natural condition, but the diarrhœa had returned, and in defiance of all that could be done for him, continued without intermission until the end of January in the present year, when, in consequence of his emaciated and miserable appearance, and the offensive nature of the evacuations, I requested that he might be destroyed; a request that was immediately complied with.

I made a post-mortem examination of him, and, as I had prognosticated, found the mucous lining of the intestinal tract generally inflamed, but especially so in certain parts of the cæcum and colon. There was no structural disease in any other part of his body. The liver and kidneys I particularly noticed, and found them of a natural colour, and quite free from all disease; and up to the last moment of the animal's existence, the common functions of life, viz., his breathing, the pulse, the temperature of his body, the colour of the visible mucous membranes, his unfailing appetite, and lively spirits, went on with that regularity and harmony which usually indicate perfect health.

I should like to know how the extreme obstinacy of this case is to be accounted for, as its origin seemed simple, and referable to common and every-day causes; causes that I have generally had but little trouble in removing and rectifying the consequent effects of, by the adoption of the same medical treatment and those measures of hygiene which were unsuccessfully practised in this instance.

DISEASE OF THE OS FEMORIS, WITH LACERATION OF THE LIGAMENTUM TERES, &c.

By C. MARSON, M.R.C.V.S., Worcester.

THE perusal of Mr. Gibbon's case of caries of the hip-joint in a previous number, has induced me to forward to you the following particulars of a case of disease of the head of the os femoris, accompanied with laceration of the ligamentum teres and caries of the cotyloid cavity. The subject was a brown horse, aged, belonging to Mr. C. Marson of Rugeley. The animal had two small bony enlargements on the inner side of each hock, for which he had been repeatedly blistered and ultimately fired. He had also been fired over and around the round bone. He was an excellent worker, and capable of drawing a ton weight of goods with ease. Not-

withstanding his infirmities, he ran well in harness, and could trot from ten to twelve miles an hour. The symptoms occasionally evinced were as follow: If he was suddenly turned round, or started off in haste, the affected limb appeared for a time to be utterly useless, when he would carry the limb and run on three legs for a hundred yards or so, his ears would be thrown back, and his countenance give evidence of his suffering. When in harness, and if going fast, and the weight of the vehicle pressed upon his hind quarters, he would suddenly stop, and if urged to go on by means of the whip, he would make an attempt to kick or run across the road, and thus relieve himself of the pressure of the breeching. The muscles of the affected limb were much atrophied, especially those of the gluteal region; the hoof much worn at the toe, in consequence of his dragging it on the ground when very lame, and continually resting it upon the ground when in a state of quietude. At times, if he was worked more severely than usual, the pain was so great as to affect his appetite. When not suffering pain he was a good walker, although he stepped short with the affected limb. Having occasion to go to Rugeley at Christmas, I was informed that he was then very lame indeed, and was requested to see him and give my opinion as to the advisability of treating him. Upon entering the stable the horse threw up his head, gave a peculiar snorting sigh, and trembled from head to feet. The anterior portion of the hoof and pastern-joint were resting on, being in contact with, the flooring of the stable; there was likewise an enlargement at the acetabulum-joint, and great pain was evinced on pressure. I endeavoured to reduce it by the usual means, and replaced the head of the femur, but the least motion of the surrounding muscles caused it again to fall from its place, accompanied with a "snapping" kind of noise. The limb then became pendulous; the pulse was from 50 to 55 in the minute, and full; the countenance had an anxious appearance, indicative of intense suffering; if the animal was moved it was accompanied with a grunting noise; patches of perspiration covered the hind quarters and various parts of his body; once or twice he lay down, and could not rise until assisted to do so; his breathing was laborious, and accompanied every now and then with a deep, heavy sigh; he voided his fæces and urine freely; his extremities were cold. My prognosis being unfavorable, I advised that he should be slaughtered, which advice was immediately acted upon.

The history of the case was this: Mr. Marson had been

carting some coals, and the ground being very slippery, in consequence of the frozen state of the snow, the animal slipped up, and consequently became very lame, the whole weight of the coals having been thrown on to the breeching. He was taken home, the part well fomented, and this, combined with rest, very much assisted in restoring him to his usual condition. A few days after a friend borrowed him to cart some carrots, the ground still being very slippery from frost, added to which they had presumed upon his reputed ability to draw great weights and had overloaded him, when he again slipped and could not recover himself; he consequently dislocated the joint.

Upon a post-mortem examination, I found the injured parts to present the following appearances: The ligamentum teres was torn asunder, the separated ends having the appearance of a frayed rope's end. The ligament had lost all its characteristic glistening brightness, was of a dirty-pink hue, and of a softish consistence. A portion of the cartilage of the head of the femur was in a carious condition, in fact, had nearly disappeared, the diseased part being of a dirty-brown colour, and of the size of a shilling. A corresponding condition appeared in the cotyloid cavity. The capsular membrane was ruptured, and the surrounding tissues engorged with blood.

From these post-mortem appearances I inferred that the ligamentum teres had been in a diseased state for some time prior to the laceration, as well as the bones of the joint; the lameness was, of course, only symptomatic.

SUSPECTED CASES OF POISONING OF CALVES BY YEW LEAVES (*TAXUS BACCATÆ*).

By W. L.

ON the 3d of April last, I was summoned to attend three yearling calves, the property of Major T. E., which were said by the messenger to be vomiting very much.

On my arrival, at noon, I found my patients in a pasture field, and was told that they had not been perceived unwell previous to 7 a.m.

They showed the following symptoms: Loss of power in the hind extremities, evidenced by a staggering gait; great dulness; eyes prominent and watery; a little frothing at the mouth; irritation of the rectum, manifested by frequent

straining; pulse slightly accelerated; breathing nearly natural.

My impression on observing these symptoms was, that the calves had eaten some plants of a poisonous nature. I therefore asked whether they had been in any plantation, or had had access to any branches of the yew-tree? and was answered in the negative. My attention was next directed to the herbage of the field, but I could not discover anything to account for their illness. Being told that some of the vomited matter was still to be seen, I examined it, and found it to contain several leaves of the rhododendron, and, as I believed, laurel, but no yew. On inquiring as to where they had obtained the rhododendron, I was shown a heap of cuttings which had been carried from the garden and placed in one corner of the field, and was further informed that the calves were seen eating of these the previous evening. On searching the heap I found it to consist chiefly of the leaves, &c., of the rhododendron, but it also contained some fir cuttings, and *a very few sprigs of green yew.*

I had not yet discovered any traces of yew in the vomited matter; but on my expressing my conviction that the calves were poisoned by it, an attendant told me that he and another of the servants had seen some in other vomited matter in another portion of the field. On going to look at this, I found that the yew, if there had been any, had been taken away. I may here state, that it seemed to be with great reluctance that the servants gave me any information, and it was only on my going away that one of them showed me a large branch of yew which he said had been found in the heap before I searched it. This branch, however, did not appear to have been much browsed upon by the calves; and I still remained in ignorance of the quantity of yew they had eaten, and, indeed, as to whether they had eaten any.

Treatment.—Having had my patients placed in a loose box, I administered to each a saline purgative containing carbonate of ammonia. I then directed a sinapism to be applied to the loins of each; the calves be well rubbed with wisps of straw, and have enemata of warm water thrown up hourly, with a plentiful allowance of thin gruel and warm water, but no solid food.

At 6 p.m. I gave to each a dose of linseed oil, with

Spt. Ether. Nit. et Spt. Ammon. Arom.,

and ordered the continuation of treatment as before directed. On the next day I found the calves much better; the purga-

tive had operated freely, and the animals were very desirous of food. The following day they were all convalescent.

[Does it follow that the yew was the only poisoning vegetable in the above cases? May not the rhododendron have had something to do with it? We are not told what variety of this plant it was, the leaves of which were found by W. L. Burnett places many of them among suspicious plants, and states some of them to be deleterious. The *Rhododendron ponticum* is said by him to exude a nectareous juice, from which honey being made by bees, it possesses intoxicating and poisonous properties of a phrenitic kind, which is not only formidable in its symptoms, but also very lengthened in its duration. This plant is often found associated with the *Azalea pontica*, believed to be the *Ægolethron* of the Ancients; and it was to many of the soldiers eating honey collected from such plants that the plague was attributed which afflicted the army of Xenophon, in the celebrated retreat of the 10,000.]

TAKING UP THE VEIN (VENA SAPHENA MAJOR) FOR BOG SPAVIN.

By the Same.

A SHORT time ago I attended a colt which had been operated upon by a Lancashire farrier, or blacksmith, for the cure of a bog spavin in each hock. The operation consisted in dissecting out the vein, and placing ligatures upon it. Subsequently, one leg became enormously swollen, and the skin very tense, but the other was not so much affected. The tumefaction extended from the fetlock to the sheath, where, as well as in the thigh, several abscesses formed. The poor animal had been in this condition for several weeks, but under proper treatment at length recovered, much to the satisfaction of the owner, who declares that he will never again have a case of bog spavin so "doctored."

DISEASE OF THE FRONTAL AND MAXILLARY SINUSES, AND FORMATION OF ABSCESSSES IN THE LUNGS; THE SEQUELÆ OF INFLUENZA.

By W. D. BRAY, V.S., Broughton-in-Furness.

IN the month of August I purchased a horse, half-bred, five years old, and about fifteen hands high.

History.—The animal has been in the possession of a contractor on the London and Wolverhampton Railway, for the last twelve months, and employed by him for the purpose of carting provision, &c., for the other horses. Influenza having been very prevalent amongst the other horses, this horse had also a slight attack, and a slight discharge issuing from the nostrils was still existing. He was disposed of on the supposition of being glandered. I purchased him on the 18th of August, 1856.

Symptoms.—Violent cough; increased lachrymal secretion; general depression; breathing accelerated; pulse quick; a discharge from both nostrils, which is thin and watery; throat appears sore; neither the maxillary, the submaxillary, nor the parotid glands are tumefied; pain is evinced on pressure being applied to the trachea; the dung is offensive, slimy, and voided in small quantities, and hard; the urine is thick and very high coloured.

Treatment.—A dose of aperient medicine was given, and a stimulating embrocation applied to the throat. After the bowels were slightly opened, Nit. Pot., \mathfrak{z} ss, was exhibited night and morning, for a few days. The animal is turned out by day on good grass.

August 25th.—The horse is more lively, the cough less, the pulse normal, but the discharge from the nostrils has increased, and is of a yellowish appearance, although not tinged with blood in the slightest degree.

The treatment to the 31st consisted in giving doses of Cupri. Sulph., \mathfrak{z} j, made into a ball with linseed meal and treacle, twice a day.

September 1st.—The animal is much improved in condition, but the cough is more oppressive than even at first, and is very violent on the horse being put into a brisk trot. The discharge from the nostrils is not at all diminished, and is very thick and offensive, although whiter in colour; the pulse is accelerated, and the throat still appears sore, but

none of the glands are in the least enlarged. Gave Ammon. Carb., with small doses of belladonna and Gentianæ Pulv. daily, until the 14th, when the cough had almost ceased; the discharge also was much decreased, and no pain was shown in the act of deglutition.

18th.—The animal is much improved in condition, and a slight discharge only exists.

He appeared to be improving up to the 4th of January, 1857; and indeed, to use the stable phrase, was what is termed “fresh,” when on being led out for exercise, and a cart suddenly passing him, he jumped, gave a kind of groan, dropped down, and immediately expired.

Post-mortem examination twelve hours after death.—The frontal and maxillary sinuses were filled with fetid pus. The stomach and intestines were healthy, as also were the kidneys. The left lobe of the liver was larger than the right, and hard and thick on its edges. The left lung was diseased, and an abscess weighing 2lb. 1oz. existed on it. The right lung was healthy, but in the cavity of the chest a large quantity of semi-fluid matter was found. The apex of the heart was closely adherent to the pericardium, and at the place of attachment was much thickened.

UTERINE AND VAGINAL LACERATION, WITH EXTENSIVE HÆMORRHAGE, IN A COW.

By T. SARGINSON, Junr., Student of Veterinary Medicine,
E.V.C.

THE subject of the above was a valuable five-years-old cow, the property of Mr. William Murray, Galehous. On the 25th of February, 1857, the owner came in great haste, requesting our immediate attention to her, as, according to his expression, “she was bleeding to death.” Being from home at the time, I did not see her until 10 o’clock, p.m., which was about five hours after the owner had been at our place. On inquiry, I found that a cow-leech had been there upon some other business, at the time the cow was manifesting symptoms of parturition; he, therefore, proposed, and the owner consented, that he should introduce his hand, to ascertain, as he said, “that all was right,” but he stated, “there was scarcely any passage.” The owner then requested him to let her alone awhile; he exclaimed, “Oh no!

its all right, we shall have a calf directly," and certainly a fine calf was soon produced, but which died in the mean time; and, as a consequence of tearing open the os uteri, extensive hæmorrhage commenced immediately after, the blood, according to the owner's statement, "fairly spouting out." When I arrived, I found that the bleeding had considerably abated, but, from the state of the pulse, it was evident that the animal had lost a very large amount of the vital fluid. The placental membranes had been abstracted along with the calf. I immediately proceeded to examine her per vaginam, when I found that the os uteri was deeply torn at its infero-lateral part, and also the vagina to the extent of at least five or six inches: a portion of the vagina had been completely torn away. I did not think it advisable to treat the wound locally; I therefore ordered cold applications to be applied continuously to the lumbar and sacral regions, and directed a table-spoonful of the following mixture to be given every two hours in three gills of cold water:

℞ Acid. Sulphuric., ℥j;
 Aquæ Communis, ℥viij. M.

This mode of treatment was evidently attended with beneficial results, for there was a complete cessation of the hæmorrhage in the course of a few hours; I nevertheless ordered the mixture to be administered for twelve hours longer, the interval between the doses being lengthened to four hours. The cold lotions were persisted in for twelve or fourteen hours, and then discontinued.

February 26th.—The pulse, which at the first was to be felt as a mere quivering, is about 140 in the minute, and extremely weak. There is cessation of rumination, with total loss of appetite, and the secretion of milk is suspended. Let a portion of well-boiled oatmeal gruel be horned down every three or four hours. Ordered the following:

℞ Pulv. Ferri Sulph., ℥iij;
 „ Baccæ Lauri, ℥ij;
 „ Pimentæ, ℥ij;
 „ Camphoræ, ℥jss;
 „ Aloës B. B., ℥jss. M.

and divide into six powders. One to be given every six hours in a little gruel.

27th.—Animal improving; pulse about 100, and possessing more tone than yesterday; she has drank a little water and eaten some turnips. Continue medicine as before ordered.

28th.—She continues to improve; the pulse is about 80;

the appetite returning, and rumination is partially re-established. Ordered the following mixture:

R Sp. Æth. Nit., ʒiij;
Aquæ, ʒvij. M.

Give four table-spoonfuls every eight hours, in a little cold water.

29th.—The pulse is gradually decreasing in number, and also acquiring more tone; the appetite is improving, and she is beginning to yield her milk. Continue the medicine as prescribed yesterday. The bowels being a little constipated, I ordered a mild laxative.

March 1st.—The pulse is about 60. She has given about five quarts of milk this morning, and may now be safely pronounced convalescent. There is a slight discharge from the vagina. I examined the wound this morning, not liking to do so sooner, being afraid of inducing further hæmorrhage. I found, however, that it was in a perfectly healthy state. Continue the mixture. The bowels are relaxed.

2d.—Animal convalescent. Discontinue medicine. After this she continued to improve, and is now quite well. The wound, as far as I can ascertain, is healing rapidly.

This mode of treatment has very frequently been resorted to by my father in similar cases with signal success; but he has also, in certain cases of uterine hæmorrhage, administered opium, the secale cornutum, &c., followed by stimulants, such as ammonia and camphor.

Facts and Observations.

THE APPREHENDED MURRAIN AND GLANDERS IN HORSES.

THE following may have been read with no little surprise by our professional brethren. The *Gazette* of Tuesday, May 5th, contains the following translation of a proclamation, which has been issued by the Stockholm Chamber of Commerce relative to the cattle disease:—"The Royal and State Chamber of Commerce makes known, that information having been given to the Board that in certain places in the Grand Duchy of Mecklenburg-Schwerin cases of virulent diseases among horned cattle have appeared, and that the same disease which has been for some time prevalent in the

kingdom of the Netherlands has latterly increased considerably in the province of Friesland; the Chamber of Commerce now declares the Grand Duchy of Mecklenburg-Schwerin infected by disease in horned cattle, and repeats the order formerly published, declaring the following countries infected by the same disease; viz., the Netherlands, England, Scotland, the Duchies of Holstein, as well as that part of the Duchy of Schleswick which is situated between the river Eider and Huzam in the west, and Flensburg in the east; besides which, the Netherlands, Zeland, Funen, and Jutland are declared infected with glanders in horses."

UNIVERSITY OF LONDON.

BEQUEST OF £20,000 TO AN HOSPITAL FOR THE INVESTIGATION AND CURE OF DISEASES OF QUADRUPEDS AND BIRDS USEFUL TO MAN.

ON Wednesday, May 6th, the *Senatus* met at Burlington House, for the first time, for the purpose of conferring degrees and scholarships, and awarding prizes.

At two o'clock Earl Granville, chancellor; and Sir John C. Lefevre, vice-chancellor, accompanied by the *Senatus*, entered the hall, and were very warmly received by a numerous assembly, comprising many ladies.

Dr. Carpenter, the registrar, read a lengthened report. It congratulated the members of the University on their having, in conjunction with the Royal Society, obtained permanent possession of the spacious room in which the meeting was held. It stated that the chair in which the Chancellor sat was presented by Sir Isaac Newton to the Royal Society; and that before their next meeting the walls would be adorned with portraits of Bacon, Newton, Locke, Wren, Boyle, Hunter, Davy, and other distinguished men. The report also congratulated the assembly on a recent decision of the Master of the Rolls, confirmed by the Lords' Justices, before whom it was brought on an appeal, by which the University became entitled to £20,000, invested in the Three per Cents., bequeathed by the late Mr. Thomas Brown, of Dublin, to an hospital for the investigation and cure of diseases of quadrupeds and birds useful to man.

[We know nothing of the nature of this bequest beyond what is stated above; nevertheless, we cannot help thinking

that the University of London has been singularly fortunate in obtaining it, when already a hospital exists—the Royal Veterinary College—that answers, in great part at least, to the intentions of the donor.]

THE IODIDE OF AMMONIUM.

THE above-named salt, it appears, is likely to supplant the iodide of potassium in therapeutics. Dr. Richardson has extensively employed it in phthisis pulmonalis, chronic rheumatism, and in a variety of forms of strumous disorder attended with glandular enlargements, with considerable success. Its action is in many respects analogous to that of the iodide of potassium, but its effects are more rapidly evidenced. Sometimes it produces diuresis, and its influence in the reduction of glandular swellings, is said to be exceedingly well marked and satisfactory. As an external applicant, the iodide of ammonium may be made into a liniment; glycerine, or the soap liniment, being the menstruum; and thus applied it is easily absorbed.

MUSCULAR FIBRE STIMULATED BY LIGHT WITHOUT THE AID OF NERVES.

M. BROWN SEQUARD has forwarded a paper on this subject to the Royal Society of Great Britain. Haller mentions the fact, but it appears either to have been lost sight of or repudiated by modern anatomists. M. Brown Sequard's experiments prove that some portions of muscular fibre—the iris of the eye, for example—are affected by light, independently of any reflex action of the nerves. The effect is produced by the illuminating rays only—the chemical and heat-giving rays remaining neutral. The iris of an eel was found to be susceptible of the excitement sixteen days after the removal of the eyes from the head. This muscle, however, so far as is yet known, is the only one on which light causes this effect.

CHINESE MEDICINE FOR HYDROPHOBIA.

THE following appears in the *Opinione* of Turin: “A missionary who has just returned from China states that, in that country, a kind of *polygala* is successfully used as a cure for hydrophobia. This plant has thick leaves, and its stem con-

tains a milk-juice; it grows to the height of two feet, with a thickness like that of a goose-quill. The flowers are small, and of nearly the same colour as the leaves. Its root is perennial, and annually produces new shoots and stems. There are several kinds of *polygala* in Europe, two of which are used in medicine against the bite of reptiles. In order to apply this plant as a remedy, the Chinese gather a handful of the stalks, crush them, and cook them in water in which about two pounds of raw rice have been washed. The decoction is effected by means of a water bath. The juice is then strained, and half a pint of it is administered to the patient, if he be an adult, and this draught is continued for several days, gradually diminishing the dose. Sometimes a single dose suffices for a radical cure. It is also administered to animals with their food, large cattle requiring a much larger quantity."

A NEW KIND OF FORAGE.

PRINCE SCHARTZENBERG has lately made successful experiments in some of his farms for converting the leaves of the ash-tree into forage for cows. About 50 lb. of the leaves were, in October last, arranged in a tub with alternate layers of salt, and kept covered until the beginning of March, when they were taken out, mixed with chopped rye-straw, and given to the cows. This new food appeared so palatable to them that they would select the leaves with the greatest avidity, leaving the straw untouched. The leaves were then given to them without any mixture, and were eaten with the same relish.

Extracts from British and Foreign Journals.

THE CHARACTERS AND EFFECTS OF DISEASED MEAT.

THE Imperial Central Society of Veterinary Medicine of France, with a view of throwing light upon a very important question of public health, proposed the following subjects for a Prize Essay:—

1. Is it possible to ascertain by the examination of butchers' meat, whether the animals that furnished it were in perfect health?
2. Are there any special and precise signs which enable us to determine whether butchers' meat (the animal

being still entire, divided into quarters, or cut up) has been prepared from healthy animals, the flesh having become changed by atmospheric or other influences; or from animals that have died, or have been slaughtered in consequence of fatigue, accident, the absence of proper care, deficiency of food, &c.? Is such meat to be considered wholesome or unwholesome; and, in the latter case, what are the inconveniences which result to man from its temporary or permanent consumption? 3. Can we determine, by the inspection of the entire or divided animal in slaughter-houses or butchers' shops, whether it has died or been slaughtered; having been for a greater or less period of time the subject of diseases, such as carbuncular disease (*charbon*), peripneumonia, (*cocotte*) phthisis, small-pox (*clavelée*), measles, rot (*cachexie aqueuse*), &c.? If so, point out the signs by which the traces of these diseases may be recognised. 4. State, basing your opinion as far as possible upon facts, besides those already known, whether food prepared from such flesh should be allowed to be consumed, or whether it should be confiscated and destroyed.

A prize of 1000 francs was offered, but only one essay, that of M. Soumille, of Avignon, was sent in, and for this a gold medal, 200 francs in value, was decreed. The essential points of the essay are indicated in the following extracts from M. Reynal's report upon it:

1. M. Soumille believes it is impossible to determine whether an animal is perfectly healthy, except when it is seen entire or divided into quarters. He makes an exception in favour of general diseases which attack the entire organism, as measles, small-pox (*clavelée*), phthisis, and carbuncular disease, which he terms gangrenous splenitis.

2. During rains and mists, meat suffering from atmospheric influences remains soft. It dries with difficulty, and that which is situated beneath fleshy surfaces never dries. It is of a pale colour, and easily retains the impression of the finger. It is easily spoilt, and acquires a putrid smell, which keeps constantly increasing. The author has seen meat become black in less than two days after its preparation. When cooked, it is soft, and destitute of all flavour. In stormy weather the southerly winds exert a pernicious effect upon the flesh of young lambs and calves. That of sheep and oxen resists better, but furnishes a less rich broth, and much less nutritious fibre than at other periods. During severe cold in winter, meat sometimes freezes, and acquires great rigidity. When cut, at the surface of the section droplets of coloured fluid may be seen oozing out at the end of each

divided fibre. It resists cooking, and continues to yield water. It is tasteless and indigestible, and should not be employed as food. During the great heat of summer, meat becomes quickly blackened and spoilt, decomposition taking place more or less rapidly.

3. The inspection of the entire animal at the slaughter-house, where the viscera can be examined, alone allows of our determining whether it was the subject of carbuncular disease (*charbon*), peripneumonia, or phthisis, at its death. If quartered or cut up, no proof of this can be obtained. Sheep suffering from the small-pox (*clavelée*), seen in the carcase, exhibit an infiltration of the external cellular tissue, which is also pierced by small apertures. Mutton, coming from sheep the subjects of rot (*cachexie aqueuse*), is infiltrated with serosity, flaccid, and deficient in colour. In regard to the measles (*ladrerie*) of pork, it may be always easily detected, whether the animal has been cut up or not. Small, whitish granulations, which contain the vesicular worm, are observed at the cut surface, and especially in the lean portion of the meat. When such meat is exposed to the action of fire, a crackling is heard, due to the rupture of the measley vesicle. Supported by a great number of observations made upon animals suffering from this disease, M. Soumelle opposes the general opinion that the pork they furnish is pale, and that the bacon is yellow, and without consistence. Beyond the presence of the vesicle, he maintains that this measley meat presents no difference whatever in colour, smell, or consistence. He also denies the unwholesome properties so generally attributed to measley pork, and believes it to be just as wholesome and agreeable, when eaten fresh, as is non-measley pork; and in proof of this, he refers to many experiments made upon himself and his family. He admits, however, that this pork does not salt well; there is great loss, and it does not, when salted, keep so long. Moreover, sausages made of this pork dry with difficulty, and keep for less time, soon becoming black and rancid if not kept in a dry place. M. Reynald calls attention to the importance of this point being further investigated, as, if the author's observation becomes verified, the present great loss to both producer and consumer, by the destruction of measley pork, may be prevented.

4. The manipulation of the flesh of diseased animals is rarely, in M. Soumille's opinion, followed by ill consequences, unless wounds, excoriations, &c., be present. He observes that butchers' lads, catgut-makers, tripe-dressers, &c., generally enjoy an excellent state of health. The consumption of these meats may be permitted without inconvenience; and

the author would only prevent the sale of such as proceeded from animals in whom emaciation coincided with disease, advanced age, and paleness of the fleshy fibre. He would also proscribe, although convinced of its harmlessness, the use of meat furnished by fatigued animals, or by those which have not sufficiently bled at the slaughter-house, by reason of its tendency to rapid decomposition.

The signs which indicate that an animal has died naturally are, according to M. Soumille, when the entire animal is examined, lesions of certain viscera, coagulation of blood in the vessels, hypostases in the great splanchnic cavities, and injections or arborisations of the cellular tissue. When cut up, the meat is red, and blood flows from it when it is divided. Its surface is part-coloured, red, white, blue, and yellow, being mingled together. In animals that have been slaughtered in consequence of their fatigue, or of the bad care that has been taken of them, the characters, with less intensity, much resemble those indicated above. M. Soumille especially insists upon the injection of the muscular substance; but he does not think that when the animal has been cut up, that any real difference can be established between the flesh of an animal which has been slaughtered on account of fatigue, and of one that has died a natural death. The former may be eaten, but M. Soumille recommends that the latter should be rejected, although he does not believe that it is capable of giving rise to ill consequences. Upon this point he has instituted experiments upon animals, the results of which are confirmatory of the conclusion arrived at by M. Renault, viz., the harmlessness of such meat.—*Medical Times and Gazette*.

ON PEPSINE.

By W. STEVENS SQUIRE, Ph. D.

SOME time since a new medicine, under the name of pepsine, was introduced in Paris, and was extensively used there by Dr. Corvisart and others, apparently with considerable success in dyspepsia, aepsia, and certain cases of consumption. This preparation consists principally of a substance well known to chemists and physiologists, the nature and composition of which, however, is but imperfectly made out. It is, in fact, to a principle termed pepsine that the gastric juice chiefly owes its property of converting meat and other matters received into the stomach into a form in which they can be readily assimilated.

By the term gastric juice is understood a fluid secreted by the stomach, and poured into it through a number of minute tubes, situated in the mucous membrane which forms the interior coat. These tubes are, during fasting, plugged up by a mass of epithelial cells; but when the mucous membrane is irritated by food or by certain other stimulants—pepper, for example—the secretion of gastric juice commences, the plugs of epithelium are expelled, and the juice distils into the cavity of the stomach.

Gastric juice contains about 97 per cent. water, 1.25 per cent. pepsine, and 1.75 per cent. salts, consisting of carbonate and phosphate of lime, chloride of sodium, minute traces of sulphates, and sometimes a trace of ammoniacal salts. The proportions, however, in which these inorganic constituents are present, vary considerably. Lastly, the gastric juice contains a free acid, which is one of the most important components.

As it would be impossible to obtain a sufficient quantity of gastric juice for medicinal purposes from living animals, either by fistulous openings or any other method, we seek to intercept the pepsine before it passes into the stomach, and to extract it from the little tubes in which it is secreted or at all events along which it passes on its way. For this purpose the rennet-bags of sheep are the most convenient, on account of the large supply which is always at hand; and the following process has been proposed by M. Boudault:—The rennet-bags are opened and reversed, and washed under a thin stream of water, to free them from alimentary matters, &c. The mucous membrane is then carefully scraped off with a knife, the cells are bruised in a mortar, and digested for twelve hours in distilled water. The liquid is then filtered, and neutral acetate of lead is added, which precipitates peptate of lead. This precipitate is collected and decomposed by means of sulphuretted hydrogen, pepsine is thus liberated in solution, and is separated from the insoluble sulphide of lead by filtration. This liquid represents a neutral gastric juice. It is, however, necessary that it should be acid, and for this purpose lactic acid is added until the liquid exhibits the same degree of acidity as a specimen of gastric juice obtained from the stomach of a dog by means of a fistulous opening. The reason why lactic acid is selected for this purpose will be shown below. If the artificial gastric juice thus obtained, be evaporated to dryness at a gentle temperature (it should not exceed 100° Fah.), a gummy mass is obtained, which attracts moisture from the air, and is altogether a very unfit article either for sale or administration.

In order to reduce it to powder, M. Boudault simply evaporates his artificial gastric juice to a syrupy consistence, and to this he adds dried starch in such proportion that one gramme (15 grains) shall be in a position to digest four grammes of dry fibrine, when the two are submitted together in the presence of water to the temperature of the human body.

The substance thus produced is a fawn-coloured powder, cohering somewhat together, and possessing a peculiar taste and odour. It yields to water, the lactic acid, and the pepsine, producing a solution of a yellowish tint, with the colour, odour, and taste of gastric juice.

A solution of pepsine, that is to say, the neutral artificial gastric juice, presents the following reactions:—Salts of lead and mercury give rise to precipitates, which, when decomposed by sulphuretted hydrogen, reproduce the pepsine with its physiological properties. Tannin likewise precipitates pepsine, but the precipitate has no power whatever of digesting fibrine. Rectified spirit precipitates the pepsine from its solution. This precipitate is soluble in water. Absolute alcohol dehydrates pepsine, and destroys, or at all events greatly diminishes its digestive power. One property, however, which pepsine possesses, which is very characteristic, and which is a fruitful source of failure in its preparation, is, that at the temperature of about 120° Fah., its solution becomes slightly turbid, and loses entirely its digestive properties.

There has been considerable difference of opinion with regard to the nature of the acid in the natural gastric juice; some chemists assert, that the acidity is mainly due to hydrochloric acid, some are advocates for phosphoric acid, others again for lactic acid, but it is universally admitted that the gastric juice must be acid, to produce its physiological effects, and that lactic acid is always present to a greater or less extent. Lehmann found, that when gastric juice is distilled, the first portions which passed over were free from hydrochloric acid, but as the liquid became more concentrated, hydrochloric acid was obtained; and this he ascribed to the property possessed by concentrated lactic acid of decomposing the compounds of the strongest acids, and in this case to the decomposition of the chloride of sodium.

In order to determine this question, M. Boudault made the following experiments. He first wished to ascertain whether the gastric juice, as it issued from the mucous membrane, was acid or not. With this view, the rennet-bags

were carefully cleaned and washed as long as any acid reaction was manifested to litmus paper; the cells were then bruised, and treated with cold distilled water; and in this way a perfectly neutral fluid was obtained. This fluid did *not* possess the power of digesting fibrine at the temperature of the body, but on the addition of a little lactic acid a complete digestion was obtained.

Now it is well known that pepsine has the property of converting glucose or grape sugar into lactic acid, and when we consider that the saliva can by its action convert amylaceous substances into glucose, and that pepsine determines the conversion of glucose into lactic acid, we have a very fair explanation of the acidity of the fluid found in the stomach.

Boudault found that a mixture of glucose, neutral pepsine, and fibrine, yielded complete digestion after twelve hours. The process of digestion did not, however, commence until the liquid had assumed a strongly acid reaction. I will not, however, say that lactic acid is the only acid which is capable of playing this part, on the contrary, hydrochloric and acetic acids yield perfect digestions, but not with the same rapidity as lactic acid.

From a number of digestive experiments carefully performed, Boudault found that the pepsine obtained from herbivorous animals is identical in its properties with that obtained from the carnivora, and may be substituted for it, so far at least as the digestive functions are concerned.

The employment of an artificial digestive agent is not new in medicine. The liquid obtained by treating rennet with water, acidified with some acid, has been given with success, but it has never been much used—probably in consequence of the disagreeable nature of the dose; but now that we have the means placed before us in an elegant form, it is no longer a matter of difficulty. The details and the cases where it may be employed will suggest themselves to every medical man. There are at present four preparations of pepsine in use—namely, No. 1, acidified with lactic acid; No. 2, which contains in addition 1 per cent. hydrochlorate of morphia; No. 3, containing $\frac{1}{4}$ per cent. strychnia; and No. 4, which contains no lactic acid, and is useful where there is an excess of acidity.

Other medicines, however, may be given in conjunction with pepsine, without in any way impairing its action; among these are subnitrate of bismuth, lactate of iron, carbonate of iron, iodide of iron, and reduced iron. Attempts have likewise been made to form a syrup of pepsine, as a more agreeable way of exhibiting this medicine;

but it was found that the sugar was, after some ten or twelve days, converted into glucose, and finally into lactic acid. A solution of pepsine will keep any length of time, provided air be excluded; but, in the presence of air, decomposition soon sets in: and I have found that the best form to keep it in is that of a powder, as originally proposed by M. Boudault. It may be taken in this form very conveniently between two slices of bread, or in the first spoonful of soup, which, however, should not exceed the temperature of the body; the dose being about fifteen grains.

The gastric juice possesses all the characters of a diluted acid; it attacks iron filings, and decomposes the alkaline carbonates, and it appears to me that this fact would justify a much more extended use of the lactates than at present prevails, for such preparations as *ferrum radactum*, *ferri carbonas saccharatum*, *mistura ferri*, &c., must be resolved into lactates soon after they reach the stomach, and that, too, at the expense of one of the most important constituents of the gastric juice.

Mr. Squire has notified, in letters to the 'Lancet,' and 'Medical Gazette,' the existence of a spurious preparation of pepsine, for distinguishing which he gives the following tests:—

<i>True Pepsine.</i>	<i>Test.</i>	<i>False Pepsine.</i>
Abundant precipitate } (Peptate of lead)	Acetate of lead . . .	Slight cloudiness.
Abundant precipitate } (Tannate of Pepsine)	Tannin	Ditto.
Precipitates the } pepsine	Alcohol	No effect.

The solution of true pepsine is strongly acid to litmus, whilst the false is only so in a slight degree; but more than all, M. Boudault's preparation does what it professes to do; fifteen grains digests its drachm of dried fibrine, while the spurious compound is entirely destitute of this property.
—*Lancet.*

The most serious contamination of pepsine is that contained in No. 3, namely, strychnia! For what purpose this is introduced we cannot imagine; but the circumstance of keeping such company is likely to cause alarm, and thus to create a prejudice unfavorable to the general introduction of pepsine into dyspeptic society.—*Pharmaceutical Journal.*

EXPERIMENTS WITH AMYLENE IN FRANCE.

M. DEBOUT, editor of the *Bulletin de Thérapeutique*, well known by his experiments on the perchloride of iron and other new agents, has taken up Dr. Snow's discovery with much enthusiasm; and it may be said that the anæsthetic powers of amylene have been largely tried in the hospitals of Paris. M. Debout has experimented upon animals, and has administered the narcotic agent in numerous operations performed in the above institutions. The results have always been satisfactory.

Professor Tourdes has published several articles in the *Gazette Médicale de Strasbourg*, and also presented a paper to the Academy of Sciences, on the administration of amylene. M. Tourdes's experiments in public practice are numerous; and, after detailing the phenomena produced by amylene, he offers the following propositions: "I do not hesitate in asserting that amylene will prove very valuable with infants and young subjects; for we can depend upon—1, facility of application; 2, certainty of effects; and, 3, innocuous action. To these advantages may be added—1, the rare occurrence of nausea and vomiting; 2, possibility of producing at will slight or deep anæsthesia, transitory or lasting, with or without muscular relaxation; and 3, undelayed waking up, without subsequent unpleasant symptoms. I would advise amylene for cases where anæsthesia of short duration is sufficient, for operations performed with rapidity, or for investigations bearing upon diagnosis; chloroform should be used when deep anæsthesia is required, as in the capital operations, when the surgeon should not be disturbed by the idea of the rapid waking of his patient."—*Lancet*.

MEMOIR ON THE ORIGIN OF NITRE.

By M. DESMAREST.

FIRST PART.

It results, says the author, from the facts contained in this memoir.

1. That the nitrogen and oxygen of the air are not susceptible of combining, under the influence of electricity, to form nitric acid.

2. That this acid is not formed under the influence of ozone, or when aerated water is decomposed by electricity.

3. That it is not formed by the oxydation of the nitrogen of ammoniacal gas or of organic matters, at the expense of the oxygen of the air.

4. That, finally, it is formed only when nitrogen is found in presence of an excess of oxygen, that is to say, in a case which does not ordinarily occur in nature.

These conclusions, adds the author, will receive further confirmation in the second part of this work, which will be devoted to showing how the nitrification of stones is produced.—*Comptes Rendus*, No. 2, July 14, 1856.

SECOND PART.

An attentive study of the causes of nitrification has shown me:

1. That it is produced in all porous bodies, of whatever nature; thus rotten-stone, plaster, chalk, brick, freestone, sand, wood, and charcoal, are susceptible of being charged with nitre when they are placed in favorable conditions.

2. That in walls, the nitrified portions are entirely distinct from those which are not so.

3. That they exhibit very clearly defined stains, sometimes of great extent in ancient constructions, and differing considerably in colour from the stains of simple moisture, which are not nitrous.

4. That these stains proceed ordinarily from the privies, or places into which the liquids which escape from them pass by infiltration.

5. Finally, that in pigeon-houses and poultry-houses, where there is no escape of fluid, and where, nevertheless, powerfully ammoniacal vapours are disengaged, the walls are nitrous only when they are sufficiently raised from the soil.

It evidently resulted from the whole of these facts, that nitrification is not produced by a gaseous emanation, but only by the progressive imbibition of a liquid; now, as urine is the liquid which most ordinarily escapes from privies, and as, moreover, I have ascertained that it is sufficient of itself for producing the nitrification of walls, it followed naturally, that it was the principal, if not the only cause of nitrification. The question was then reduced, in fact, to determining how it is produced. The long and tedious researches to which I devoted myself, with this view, led me to this unexpected conclusion, that animals have not the power of forming nitric acid, and that the nitre which is found in their urine is foreign nitre. It was necessary now to ascertain the source from which they derive it; vegetables naturally appeared to me to be the source.

I collected, in the country, at different places and at different seasons, a great number of plants, those which are most commonly known. Some of them, collected from the species which ordinarily contain nitre, such as borage and the sun-flower, had been sown expressly in difficultly accessible places, and in soils which gave no appearance of nitre. But for still greater certainty, the same species were also cultivated under a glass case, in an artificial soil composed of coarse lime, stone in powder, washed with distilled water, and to which I had added as manure, powdered sheep's bones, or a manure composed of human urine, fermented for a very long time with horse-dung, and not containing the least portion of nitre. Distilled water was always used for watering, and the most minute precautions were taken for isolating the pots which contained the plants, and to guard against the nitre which might come from without.

The experiments which I made for proving the presence of nitre in these plants, have shown me that plants which grow near dwellings, on the sides of roads, and in all other places frequented by animals, ordinarily contain nitre; but that we do not find it, on the contrary, in those which grow in the fields, in places inaccessible to animals, or in an artificial soil perfectly free from nitre; that, moreover, in these last conditions, plants which ordinarily contain nitre, such as borage, the sunflower, and pellitory, appear to vegetate only with difficulty; that their seeds do not always spring up, and that when they produce plants, the latter are so poor that borage, for example, scarcely attains the height of ten centimetres (about four inches) and the sunflower not more than double the height.

The natural conclusion from these results was, that vegetables have not the power of forming nitre, but that what they contain they derive from animals. I thus found myself in a circle, out of which I long despaired to find a way; however, I did not lose courage. I recommenced the attempts I had made a hundred times, to effect the oxidation of the nitrogen of the urine; I continued also to collect new observations on the cause of the nitrization of plants. I had to wait long for success; but in the end I made an observation which gave me a clue to the solution of this difficulty; I perceived that the sunflower, which, when cultivated in the open fields grew only with difficulty, and did not give nitre, grew, on the contrary, with the greatest facility and contained a considerable proportion of this salt, when cultivated in a garden. The cause of this difference could not be in the presence of manures, since these are sup-

plied to plants in fields as well as in gardens, and since I had proved, moreover, that well-rotted dung did not contain nitre, and that none was produced by its mixture with the earth. Neither could this cause be attributed to the presence of animals, since they are ordinarily excluded from gardens, and that urine is not thrown into them; it could only reside, therefore, in the artificial watering which cannot be given to plants in fields, but which garden plants received. Herein, appeared to me, the cause of the nitrification of these plants; so that if I have correctly observed these facts, if I have not deceived myself in the conclusions which I have drawn from them, if I have proved that nitric acid is formed only by the oxidation of the nitrogen of the air or of organic matters, if I have proved also that it is not a product of either animal or vegetable, I am forced to admit that nitre is a salt of mineral origin, that animals derive it from the earth, in the well or spring water which they drink, and which, passing into their urine, effects the nitrization of stones and earths, and consequently that of plants, an effect which may also be produced by artificial watering.—*Comptes Rendus*, No. 6, August 11, 1856.—*Chemist*.

SAPPHIRES OBTAINED BY A CHYMICAL PROCESS.

M. A. GAUDIN last week communicated to the Academy of Sciences a process for obtaining alumina (the clay which yields the new metal called aluminium) in transparent crystals, which therefore present the same chymical composition as the natural stone known under the name of sapphire. To obtain them he lines a common crucible with a coating of lamp-black, and introduces into it equal portions of alum and sulphate of potash reduced to powder and calcined. He then exposes it for a quarter of an hour to the fire of a common forge. The crucible is then allowed to cool, and on breaking it the surface of the lamp-black coating is found covered with numerous brilliant points composed of sulphuret of potassium, enveloping the crystals of alumina obtained, or, in other words, real sapphires or corundum. The size of the crystals is large in proportion to the mass operated upon; those obtained by M. Gaudin are about a millimetre ($\frac{3}{1000}$ ths of an inch) in diameter, and half a millimetre in height. They are so hard that they have been found to be preferable to rubies for the purpose of watchmaking.

THE VETERINARIAN, JUNE 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE RELATIONS BETWEEN FOOD AND DISEASE.

UNDER the above heading a series of articles are being given in the 'Medical Times and Gazette,' to which we would direct the attention of our professional brethren, as they contain much that is interesting to them at the present moment, although their application, of course, is more immediately to human pathology. It was our intention to have transferred them to our pages; but their length and press of other matter prevent their insertion entire, and to abridge or condense them would lessen both their force and value. We may perhaps regret that so few among us have taken up this subject, since it is a domain that especially belongs to the veterinary surgeon: nevertheless the other branch of medicine becomes doubtlessly as much interested in it as ourselves, and the same indeed may be said of every member of the community; we are therefore glad to find that it has not been lost sight of. And when we add that the writer of the above-named articles asserts that he has obtained the "welcome assurance" that Professors Spooner and Simonds will lend him their assistance in bringing to light much hitherto unknown regarding the diseases of cattle,—“a consummation devoutly to be wished”—it is clear that not only will not our profession be excluded, but we have grounds for our belief that from their united labours will result such an accumulation of facts as cannot fail to lead to the adoption of measures, cautionary and prophylactic, as will fully satisfy the public mind, and also prove the advantages that arise from an application of the principles of science to the prevention of the spread of disease, more particularly at the present time, when the “isle is almost frightened from its propriety.” Nor is this appre-

hension confined to England. Other countries partake of it, and are instituting similar inquiries, and adopting like precautionary measures; from all of which good will ultimately be derived, through the laws that govern epidemics and epizootics becoming better known, as well as the conditional circumstances that favour both their development and progress being more clearly understood.

Although as yet we are not able to give any report as having been received from Professor Simonds, we are enabled to state that he has been through Holland, Holstein, Mecklenburg, Hanover, Saxony, and Prussia, in search of the "Rinderpest," and *fortunately* has not met with a single case of it; and he is now gone into the interior of Poland, it being known to exist on the Prusso-Poland and Prusso-Russian frontiers. Under the head of 'Foreign Intelligence,' in the 'Times' of the 16th ult., occurs the following: "Professor Simonds, who has been sent by the British government to examine into the murrain which is raging in Galicia and Moravia, is now at Lemberg. M. G. Niklas, one of the professors of the Veterinary College at Munich, has also been sent there by the Bavarian government."

We say *fortunately*, for we presume no one is desirous of seeing this destructive malady in this country, although it has been falsely reported that it already exists here. We, as a people, are certainly not famous for being too early in the adoption of measures, preventive or otherwise; it is also possible that an unnecessary alarm has been created in the public mind; and if so, there at least has resulted this advantage—the history of epizootics has been inquired into, certain well-known predisposing causes to disease have been pointed out, and proper precautionary measures have been recommended for adoption, and thus we are early placed upon our watch-towers; since even our isolated situation would have given us no immunity, in these days of free intercourse between nations, if so be the disease is so contagious as has been represented.

Since the above was written, we have met with the following, in the Report made by Mr. S. Hudson, Secretary to the

Royal Agricultural Society of England, at its meeting held on the 22d ult. After stating the previous resolution of Council as to the sending out of Professor Simonds, in conjunction with the Agricultural Societies of Scotland and Ireland, he says : " On the 30th of April, the professor forwarded his first communication, in which he reported, that he found to a great extent that the pleuro-pneumonia had been mistaken for the severer malady of contagious typhus, and that he had to penetrate into Poland itself in order to meet with cases that might furnish evidences for his study and report. He expressed his firm opinion, that at present there was no fear of the contagious typhus being introduced into this country by means of living animals, whatever danger might arise from the importation of hides or other integumentary portions of slaughtered cattle."

THE LATE ANNUAL MEETING OF THE VETERINARY PROFESSION. PROPOSED TESTIMONIAL TO THE SECRETARY, E. N. GABRIEL, ESQ.

WE sincerely regret that the appeal made in our last to the profession was attended with little or no result. We had hoped otherwise; for we thought, and still think, that there exists much at the present time to operate as a stimulus to inquiry, since matters of no little moment darken the horizon, both politically and professionally considered, and respecting which many doubts may be entertained as to the consequences proving beneficial or otherwise to the body.

The numbers present at the meeting did not exceed those of antecedent years. It was, nevertheless, gratifying to see most of those who usually attend in their places. They give encouragement, and act as incentives to the Council to persevere in their labours. We have done our duty, and can only repeat sentiments already expressed by us, which we do with sorrow. The sands of the hour-glass of time sparkle as they fall with momentous events. Each day and every hour, as they pass, seem pregnant with importance. All

around us is progressing. Some great and momentous change appears to be at hand; such are the surprising alterations that have of late years taken place; and among these none are more remarkable than those which appertain to the intellectual part of man. Shall it be that we as a body alone remain unmoved, and make so little progress? Whence comes this apathy—this indifference? 'Tis ominous of evil. As pilots we perceive no storm looming in the distance; but there are signs indicative of that which we dread much more, and which is fatal to any profession—a treacherous calm. Efforts, therefore, must be made to urge every one to the performance of his duty, since the interest of each is at stake. We yearn for a more rapid advancement being made, and for the manifestation of more zeal. Something, it is gladly confessed, has of late been done; but as yet our wishes and our expectations are far from being realised. Let a redoubled energy be ours, and a determination to act in co-operation, and all will yet be well.

We must refer our readers to the report of the meeting, which is recorded in the present number; but there are one or two points in it to which we wish particularly to allude. The lessening of the examination and admission fee to the profession, may *perhaps* bring about that union which is so much desired, but we do not consider it one calculated to enhance its respectability. But, while we say this, we are decidedly of opinion, and ever have been, that pounds, shillings, and pence, will only at best prove a remote means to accomplish this end. It is alone by raising the standard of the education of the pupil that this can be effected. The curriculum must be extended, and we are glad to see that this is gradually taking place. Another educational officer being added to “alma mater” affords abundant proof of onward progress in the School, and of the right spirit being awakened. But it must not stop here, for more remains yet to be done. We are, however, quite contented to accept this as an earnest of the intention of those to whom the government of the Royal Veterinary College belongs, and are grateful for it.

At the dinner about the same number attended as at the meeting in the morning; Mr. W. Field, M.R.C.V.S., was Chairman, Mr. C. Dickens, M.R.C.V.S., Vice-chairman. A social and an agreeable evening was passed; much friendly intercourse taking place during it. Still a dinner, although thoroughly English, is hardly calculated to provoke professional converse. There is a restraint and a formality connected with it that is opposed to this. Other matters have to be discussed! while there is no breaking up into little parties, for chit-chat on subjects that may arise in the mind, scientific or otherwise; and nothing is presented to awaken thought or call for investigation. The conversaziones so spiritedly conducted not long since, and which we are sorry have been discontinued—we hope only for a time—were far better calculated for all this. We think these reunions might more often take place, as the rooms of the Royal College of Veterinary Surgeons are well adapted for them; nor need they be made expensive.

During the evening a suggestion was made that met with the most cordial reception, and which we take this early opportunity of making known, from a conviction that it will be no less favorably received by the profession. It was, that some expression of the esteem in which he is held should be presented to the secretary of the Royal College of Veterinary Surgeons, E. N. Gabriel, Esq. Doubtless the profession will be further informed on this subject, a committee being in the course of formation to carry it out. It is with communities as with individuals—a debt is incurred in infancy that never can be repaid. Let us, then, manifest our grateful acknowledgments. The College now enters on the fourteenth year of its existence as a corporation, and, during that long time, Mr. Gabriel has acted as its secretary. Need we add, that he has had no little labour to perform? Besides which, in the early period of its existence, from the funds of the institution not admitting of it, he received nothing for his services. For our parts, we are free to confess that we have somewhat scrutinised his doings, and, not being altogether ignorant of these things, know he has had something to contend with;

nevertheless, he has kept on the "even tenour of his way," and, "amid evil and good report," still commands our respect. Now there is an opportunity afforded us publicly to show that we can and do appreciate his services, and let it be done in a spirit worthy both of ourselves and him, conferring 'honour on whom honour is due.'

ELECTION OF JAMES TURNER, ESQ., AS PRESIDENT OF
THE ROYAL COLLEGE OF VETERINARY SURGEONS.

At the meeting of the Council of the College, held on the 13th ult., for the election of officers for the current year, Mr. James Turner was unanimously elected President. The cordiality of feeling that accompanied the performance of the act could not fail to impress the minds of many that it was one which long since ought to have been performed; while the unanimity of the election gave proof of the soundness of the selection made, and the worth of the man. It was well remarked by his proposer, that the name of Turner will for ever be associated with the veterinary profession, from his having discovered the navicular disease. Others may have seen it before him, but they had not investigated it, nor given publicity to it. Besides which, other contributions have been made by him to the science of medicine.

An interesting coincidence was mentioned by Mr. Turner, in his acceptance of office. It was, he said, on that day forty-six years that the late Professor Coleman gave him a commission in the army as veterinary surgeon, and he proceeded at once to do military duty at the Croydon Barracks, from which time to the present he had been actively engaged in his professional avocation; being from very early life desirous of administering to the relief of sick and lame horses, in which he had always experienced the greatest delight.

May he long live to enjoy his well-merited honours, even to their repetition.

"Palma non sine pulvere."

ROYAL COLLEGE OF VETERINARY SURGEONS.

THE Annual Meeting of the members of the Veterinary profession was held on Monday, the 4th ult., at the institution, 10, Red Lion Square, London.

W. STOCKLEY, Esq., President in the Chair.

The following were present: Messrs. Bailey sen. and jun., Batt, Braby, Broad, Burley, Cartledge, Cherry, Dickens, Field, Hall, Helmore, Henderson, Jones, Lepper, Lines, Lowe, Magennis, Mayer, Moon, Morton, Nice, Pritchard, Robinson, Silvester, Spooner, Turner, Vines, Wilkinson, Withers, Woodger, and the Secretary.

The Secretary, *Mr. E. N. Gabriel*, read the advertisement convening the meeting, and also the minutes of the previous meeting, which were confirmed.

He then read the following Abstract of the Proceedings of the Council for the past year.

Abstract of the Proceedings of the Council of the Royal College of Veterinary Surgeons during the Year 1856-7.

The ordinary routine of business, uninterrupted by any events of an exciting character, supplies but few data on which the Annual Report can enlarge. To say that the quarterly meetings have been duly attended—that the incomings and outgoings of the College have been closely inquired into—that the reports of the admission of new members into the profession, and the deaths of a few of the older practitioners have been regularly made—that donations to the Library and Museum have been received and acknowledged—that cheques have been drawn, leaving still a balance in hand—and that the arrangement of business at these meetings has been followed by pleasant professional gossips over the beverage “which exhilarates but not inebriates,”—is all that the general summary of the year has to embrace.

From the Registrar's Report we learn that twelve deaths have occurred during the past year, being less than half the number reported in the preceding one. Among them we have to regret the loss of Samuel Peech, one of the oldest and most respected members of the profession, and one of the most indefatigable members of the Council; he obtained his diploma in 1805, from which period, up to within a twelvemonth of his death, he was most actively engaged in his profession—commanding a practice of first

class character and of a very considerable range. The distances he was in the habit of riding would rather try the stamina of some of our junior contemporaries; fifty miles a day having been the average for forty years, and above a hundred not a very uncommon occurrence. He was elected a Vice-President of the College in 1847, and a Member of the Council in 1848, from which time to within a few months of his death, his zeal and untiring energy, defying alike time and distance, will long be remembered by those who witnessed his regular attendance at the meetings of the Council.

The number of pupils who have obtained the Diploma of the College during the past year is 29, 25 being from the London, and 4 from the Edinburgh School, making the number who have passed since the obtainment of the Charter, 591. The changes in the register are now so numerous that a new issue will shortly be required. The number at present on the list is 1431.

In the election of a president for the past year your Council paid a just tribute of respect to age and position. W. Stockley, Esq., the gentleman selected, was one of the foundation pupils at the first establishment of the Royal Veterinary College. He obtained his diploma in 1794, and after a life of untiring energy and perseverance, he fills the honorable position of Senior Veterinary Surgeon to the Royal Artillery; and will, doubtless, prove to you this day that the lapse of more than two thirds of a century has failed to quench the mental or corporeal energy of the man.

The only change that has taken place in the Board of Examiners during the past year has been the retirement of Mr. Solly, after nine years' valuable service to the profession. He was elected in 1847, and the thanks of the Council were unanimously voted him on his withdrawing from the Board. The Council are happy to say they have been enabled most satisfactorily to fill the vacancy thus occasioned by the appointment of Professor Sharpey, of University College, a name too well known to require any eulogium, and one that guarantees the efficient performance of the duties of the office to which he has been elected.

The financial department continues satisfactory. The increased expenses connected with maintaining the establishment of the College, residence, &c., have been met; the deposit account remains intact, and the balance in hand amounts to £272 15s. 5d.; this amount would have been larger had the examinations taken place, as was the case last year, before the Annual General Meeting. It is hoped,

in connection with certain other arrangements, that no material falling off will be experienced next year.

An important measure has been adopted by your Council, which, they are aware, is open to the grave consideration of the profession at large, and on which, doubtless, diversified views will be entertained; this is the reduction of the fee for examination and admission into the body corporate. The reduction, made at the suggestion of the authorities connected with the Royal Veterinary College, has been from ten guineas to seven, and the measure has been acceded to solely for the purpose of ensuring that cordial unanimity of feeling and action, the want of which has hitherto prevented the full development of those beneficial results which the Charter should be the means of diffusing. It is quite possible that the step thus taken, for the object of obtaining unanimity and co-operation, may seriously affect the, at present, only source of income the College has to rely on; and should the hoped-for result fail to be secured, some other means of supply must be had recourse to; but if, on the other hand, it succeeds, and the schools and influential bodies connected with them unite in giving their cordial support to the corporate body, the benefit to the profession at large will more than compensate for any pecuniary loss the College funds may sustain. The reduction was offered last year to the patrons and professors in Scotland, but we regret to say it was not, in the spirit in which it was offered, responded to, and was, consequently, withdrawn.

In conclusion, the Council regret that another year has passed without the veterinary profession having become that united body which was so fondly anticipated on the obtaining of the Charter. May the question be asked, for the last time, whose fault has this been? and may it be replaced by this—How can it now be accomplished? If party views are abolished, if personal differences are laid aside, and if the one great and good object, the advancement of our profession, is steadfastly and disinterestedly kept in view, no power on earth can prevent its accomplishment; and we might then hope to hail the approach of the period when it shall be considered an honour to become a member of the Royal College of Veterinary Surgeons.

E. N. GABRIEL,
Secretary.

ROYAL COLLEGE OF VETERINARY SURGEONS,
10, Red Lion Square; *April, 1857.*

W. J. T. MORTON, TREASURER, in Account of Cash with the Council of the Royal College of
Veterinary Surgeons.

1857	Dr.		Cr.		1857		ROYAL COLLEGE OF VETERINARY SURGEONS.		355	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.
To balance from last year	.	.	303	10	10	.	.	90	19	4
Examination Fees	.	.	325	10	0	.	.	80	0	0
Copies of Register	.	.	1	9	0	.	.	60	0	0
Interest on Deposit	.	.	10	16	7	.	.	40	0	0
						.	.	32	4	9
						.	.	4	14	3
						.	.	3	8	6
						.	.	11	2	10
						.	.	8	2	8
						.	.	7	10	6
						.	.	11	18	2
						.	.	5	5	0
						.	.	4	4	0
						.	.	9	1	0
						.	.	272	15	5
						Balance	.	£641	6	5

We, the undersigned, have audited the above, and found it correct.

W. HELMORE.

JOHN B. HENDERSON.

Mr. Lepper having moved, and *Mr. Robinson* seconded the reception of the Report,

Mr. Vines rose, and made some observations respecting an inaccuracy which he said existed in it. This being satisfactorily explained, he proceeded to make a lengthened statement relative to his early connection with the Royal Veterinary College, and his endeavours at all times to advance the interests of the profession, but which he did not think had been acknowledged or appreciated; nor had he been either fairly or kindly dealt with in being kept out of the Council of the Royal College of Veterinary Surgeons. What had he done to merit this? Yet he could only obtain a very few votes year after year. He thought he might still prove useful to them, and was desirous of being so, for he had long been a teacher, and intended being so again perhaps, having a son about to enter the profession.

The *Chairman* here called him to order, on account of the irrelevancy of his remarks, and soon after he resumed his seat.

Professor Spooner said he could not but feel gratified to find that the members of the Council were enabled on that, their fourteenth anniversary, to lay before the general body of the profession, a report which communicated the fact of their financial position being in a satisfactory state. There was one subject alluded to in the Report, which ought not to be passed over in silence, namely, the reduction of the examination fee. They were told that the subject had been discussed on a previous occasion, in Council, with a view to meet what were supposed to be the wishes of the authorities of the Scotch school, so that they might send their pupils for examination to the Royal College of Veterinary Surgeons, and admission into the body corporate. It was ascertained, however, that the desired effect would not be secured by the proposed alteration, and hence the Council declined to confirm the proceedings of the previous meeting at which the reduction of the fee was assented to; the matter, therefore, fell to the ground. The Charter gave to the Council the power of fixing the sum or sums to be paid for examination, and also for admission; and, in another clause, it is stated, that the fee or fees for *admission* should not exceed ten guineas; it being questionable whether, or not, the fixing of the special payment applied both to the fee for examination and the fee for admission. As he construed the meaning of these clauses the Council could charge what they pleased for examination, but were restricted to the sum of ten guineas for admission. That, however, did not materially affect the question. At

first the Council determined what they considered the maximum sum should be charged for examination; a sum amounting to half of that paid for the pupil's entire education. The governors of the Royal Veterinary College, as well as the authorities at Edinburgh, opposed that determination; but they were told that a high rate of charge was necessary to keep up the respectability of the profession, and prevent the accession to its ranks of men wanting in education and standing in society. He thought, however, that no scientific body ought to take such a view of the question. The estimation in which a profession was held should depend, not upon the amount of money required to become a member of it, but upon that ability, moral standing, and general character, which alone could enable the aspirant to hold a position among his fellow-men, with honour to himself, and dignity to the calling to which he belonged. Still he was not of opinion that the money paid by the pupil in the aggregate was too high, but rather the reverse. He could have wished that the fee for education had been increased long ago, because it would not only have brought into the profession men holding a better position in life, but would have afforded the governors of the College an opportunity of augmenting to a greater extent even than has been done, the sources of education, and by that means exalting the profession. The governors of the Royal Veterinary College, finding that the Council were willing to yield to the wishes of the Scotch school, but (when the Scotch authorities did not respond to the suggestion) were determined still to mulct the London pupils in the whole of the exorbitant charge, were naturally indignant at being placed in such a position: and they said, "If that be so, and if it be a fact that the Scotch pupils, not members of the body corporate, are admitted into Her Majesty's service and the East India Company's service, we will not submit to such a state of things; and, therefore, if the fee be not reduced, we will form a court of examiners for ourselves, and leave the Royal College of Veterinary Surgeons to shift for itself." The Council then wisely, as he thought, determined to reduce the fee, and had thus satisfied the governors of *alma mater*. It was true they had reduced their means of obtaining funds, but they had placed themselves in a correct position, not only with reference to the London but also to the Scotch school, by having removed from the latter one cause which they assigned as a reason for not allowing their pupils to be examined by the Royal College of Veterinary Surgeons. They had also secured the support of the governing body of the London school; and he hoped that the una-

nimity which would be the result of this reduction would tend to enhance the interests of the whole body. Although there would be some decrease in the income of the College, as coming from the same source as hitherto, he nevertheless hoped that there would be no necessity for any inconsistent retrenchment; he likewise trusted that the institution would be carried on in the same respectable manner as heretofore, and that, if necessary, the members of the profession who were desirous of maintaining the corporate body in its integrity, would not hesitate to put their hands into their pockets, and give an annual subscription, for the purpose of supporting it. Allusion was made in the Report to "parties." Where numbers of individuals met together "party" always did and always would exist. Party, indeed, rightly conducted, was the very essence of legislation, but it was too often rendered the matrix of abuses and all kinds of disturbance. He did not object to party, but he objected strongly to the personal animosities and bickerings which had prevailed among them as a body, and he hoped that these would give way to a united and anxious desire to support each other in the position they were all desirous of attaining—that of honorable members of a liberal profession.

The motion for the reception of the Report was carried.

Professor Spooner then moved that the Report be adopted.

Professor Morton seconded the motion, which passed unanimously.

The meeting next proceeded to the election of seven members of Council, six in the place of those retiring by rotation, and one in the place of the late Mr. Peech. The following gentlemen were declared elected by ballot, the scrutators being Mr. J. Field and Mr. Lowe:

Messrs. W. Field, W. Burley, W. Ernes, S. H. Withers, W. S. Goodwin, J. Constant, and W. Cheeseman; and Mr. Field was appointed (by lot) to take the place of the late Mr. Peech on the Board, his period of retirement being that at which Mr. Peech would have retired had he continued a member of the Council.

Professor Morton then proposed a vote of thanks to the president, for the manner in which he had fulfilled the duties of his office. Mr. Stockley, he said, had fully borne out all that was said of him in the Report just read, and had given abundant proof of his earnestness and zeal in connection with the profession, by attending every meeting of the Council since his election as president.

Professor Spooner, in seconding the motion, said he had known the president for many years, and the longer he had

known him the more he respected him. It afforded him great pleasure to think that the Council had had an opportunity of electing so steady and respected a member of the profession to the position which he had filled with so much honour to himself and with so much advantage to the College; and he was quite sure that at this the termination of his year of office, the members present, while thanking him for the manner in which he had filled the chair, would entertain feelings of regret that they were to be deprived of his future services.

The motion was received, and carried by acclamation.

The *President*, in acknowledging the compliment, said he entered the Veterinary College in 1791, and that he considered himself one of the most fortunate men in the profession. He referred to the period when application was made to Government (Mr. Pitt being Chancellor of the Exchequer) for a grant in aid of the funds of the Veterinary College, on which occasion, he said, he, in conjunction with the late Mr. Edmund Bond, volunteered his services to a regiment of cavalry on home service, to test the utility of the introduction of veterinary surgeons into the cavalry generally. Mr. Bond withdrew his offer, but he (Mr. Stockley), then a boy of eighteen years of age, stood alone. He was placed in a regiment with a surgeon of great eminence, who also knew a great deal about horses, and there were five noblemen in the regiment all of them sportsmen. At the end of six months there was a report made, that such appointments would probably prove useful, and Professor Coleman recommended a number of persons for commissions. He (Mr. Stockley) was at that time demonstrator of anatomy and assistant to Mr. Coleman, and should have returned to him in that capacity, but that he grew fond of a soldier's life, and (what was still more agreeable) the soldiers got fond of him. He was afterwards appointed to an assistant-surgeoncy, then to a cornetcy, and subsequently he was transferred to the Artillery, where he had remained ever since. He had done everything in his power to maintain the respectability of the profession, and that under some difficulties, for he had had the temerity to bring officers of high standing in the horse department before courts of inquiry, for interfering with his practice. He had lately re-established a museum at Woolwich, and had likewise delivered an introductory lecture. He was the first to make a stir for the improvement of the pecuniary position of veterinary surgeons in the army. In stating this, there might appear some vain-glorying, but he was desirous of showing that he had not been altogether useless. Mr. Stockley

then related an anecdote, to show the character and abilities of some of the early veterinary surgeons. A horse had been observed from day to day to be suffering great pain in the foot, arising from a prick, and apparently nothing had been done to relieve it; yet the animal had been seen daily by the veterinary surgeon. He was accordingly sent for by the superior officer, and asked why he had done nothing to the wound in the foot. "I dress it every day, sir," was the reply. "Dress what?" "Why, sir, the nail; I have it in my room." (Laughter.) The Chairman concluded by urging the members present to study to maintain the dignity of their profession, and, above all things, to have nothing to do with horse-dealing.

The proceedings then terminated.

EXAMINATIONS AT THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following gentlemen, late students of the Royal Veterinary College, London, having undergone the necessary examinations for a diploma, were admitted members of the College at the meetings of the Board of Examiners held on the 14th, 15th, and 16th ult.:

Mr. C. Dayus, Longnor.
 „ G. A. Drew, Isley.
 „ H. A. Truman, Nottingham.
 „ J. Ferris, Dittisham.
 „ E. Leach, Morchard Bishop.
 „ D. Wyer, Falkingham.
 „ J. Angle, Hendon.
 „ W. C. Branford, Shertford.
 „ E. Rogerson, Bedford.
 „ H. Flower, Derby.
 „ J. F. Norfolk, Tunbridge Wells.
 „ A. Bowles, Abergavenny.

Mr. E. H. Eldrid, Seven-oaks.
 „ J. Ellis, Liverpool.
 „ W. Watson, Rugby.
 „ W. Burt, Brighton.
 „ H. L. Holt, Northalberton.
 „ C. Gray, Rothwell.
 „ F. J. B. Jones, Ludlow.
 „ J. Wattam, Sturton.
 „ W. J. Challiner, Pendlebury.
 „ G. S. Bushman, Army.
 „ A. E. Clark, West Ashby.
 „ G. Williams, London.
 „ J. Cotterell, Lowestoft.

Of these, Messrs. Eldrid, Ellis, Watson, Burt, Holt, Jones, Wattam, Dayus, Drew, Ferris, Wyer, Branford, Flower, and Clark, received the Certificate of Membership

of the Veterinary Medical Association; and Messrs. Burt, Jones, Wattam, Dayus, Drew, Ferris, Wyer, Branford, Flower, and Clark, that of Fellowship; they having presented, during the session, papers for discussion at the weekly meetings of the Association.

Veterinary Jurisprudence.

BOURN COUNTY COURT, MARCH 24.

Before E. COOKE, Esq., Judge.

BENTON (THOS.) *v.* LAWRENCE (WM. MUNTUN).

THIS was a horse-cause, which occupied the court about four hours, and created considerable interest amongst the farmers of the neighbourhood. The jury consisted of Messrs. John Berridge, Clement William Nidd, Thomas Sharman, John Burgess, and Robert Pick.

Mr. Wallingford, of St. Ives, appeared for the plaintiff, who is an extensive horse-dealer at Earith, Hunts; and *Mr. Andrews* for the defendant, who is a farmer and grazier at Dunsby. The claim was for £36, and the action arose out of the following circumstances:

On Monday, the 10th of November, the plaintiff purchased of the defendant, at Stamford Fair, a bay mare, for £29, a written warranty being given. The mare was taken by easy stages from Stamford to Earith, and thence to Cambridge, where she was sold on the following Saturday (the 15th) to Mr. Budden, of St. Ives, for £33. Mr. Budden rode her home, and it was noticed she coughed on the journey. Every care was taken of her, and a veterinary surgeon was called in the day after he purchased her: she, however, gradually got worse, and died on the 3d of December. Plaintiff had repaid Mr. Budden £33, and an expense of £3 had been incurred for keep and attendance.

The plaintiff, and Mr. James Pearce Budden, of the Crown Hotel, St. Ives, were called and proved the above facts.

Mr. James Michael Rowell, veterinary surgeon, of St. Ives, deposed that he was called in to attend the mare on Sunday the 16th. She was very weak from loss of appetite and severe cough. He believed she was affected with chronic disease. He saw her opened. One of the lungs was entirely destroyed, and in the other lung, which was rather congested, there was

a small abscess. There was no appearance of acute inflammation during the whole time he attended her, which must have been the case if the disease had been of recent occurrence.

Mr. Andrews addressed the jury, and called the defendant, who said that he bought the mare at the Lincoln April Fair for £30, and had a written warranty with her. He used her as his hack for a time, and then turned her out to grass for about two months. She was brought from grass some time in October, and sold to the plaintiff at Stamford November Fair. She always appeared lively and well, and never had a cough.

Messrs. William Daff, William Hardy, John Pawlett, Thomas Barker, Henry Whincup, William Hares, and Smeeton, of Kirton, were examined in support of the defence.

Professor Spooner was next called, and gave a very interesting description of the appearances and effects of abscesses upon the lungs and surrounding parts. He said it was one of the nicest points in medical science to determine the length of standing of a disease from the appearances after death. He did not think the examination made by *Mr. Rowell* was sufficiently satisfactory to enable him to determine the length of time the disease had existed. There were many instances where chronic abscess might have existed for months and not give rise to any very decided symptoms of disease, if the animal were not submitted to severe physical exertion. But he had known large abscesses to form in four or five days, and the inflammatory action with which their formation was attended to have subsided in a fortnight or three weeks.

The Judge summed up; and the jury, after a short consultation, returned a verdict for the defendant.

MISCELLANEA.

AGRICULTURE IN CHINA.

“IN all parts of China to which we have access we find not only that every foot of ground is cultivated which is capable of producing anything, but that from the value of land and the surplus of labour, cultivation is rather that of gardeners than of husbandmen. The sides of hills, in their natural declivity often unavailable, are, by a succession of artificial terraces, turned to profitable account. Every little bit of soil, though it be only a few feet in length and breadth, is turned to account; and not only is the surface of the land

thus cared for, but every device is employed for the gathering together of every article that can serve for manure. Scavengers are constantly clearing the streets of the stercoraceous filth; the cloacæ are farmed by speculators in human ordures; the most populous places are often made offensive by the means taken to prevent the precious deposits from being lost. The fields in China have almost always large earthenware vessels for the reception of the contributions of the peasant or the traveller. You cannot enter any of their great cities without meeting multitudes of men, women, and children conveying liquid manure into the fields and gardens around. The stimulants to production are applied with most untiring industry. In this colony of Hongkong, I scarcely ever ride out without finding some little bit of ground either newly cultivated or clearing for cultivation.

“Attention to the soil—not only to make it productive, but as much productive as possible—is inculcated as a political and social duty. One of the most admired sages of China (Yung-chin) says:—‘Let there be no uncultivated spot in the country—no unemployed person in the city;’ and the fourth maxim of the sacred edict of Kang-hi, which is required to be read through the empire on the 1st and 15th day of every moon, in the presence of all the officers of State, is to the following effect:—‘Let husbandry occupy the principal place, and the culture of the mulberry-tree, so that there may be sufficient supply of food and clothing.’ Shin Nung, the name of one of the most ancient and honoured of the Chinese Emperors, means ‘the Divine Husbandman.’

“The arts of draining and irrigating—of preserving, preparing, and applying manure in a great variety of shapes, of fertilizing seeds, indeed, all the details of Chinese agriculture, are well deserving of note, and all display evidence of the inadequate proportion which the produce of the soil bears to the demands for the consumption of the people.”—*Sir J. Bowring.*

“NON CAUSA PRO CAUSA.”

“HERE now I remember an anecdote of Master More’s* which he bringeth in a book that he made against Bilney: and here by the way I will tell you a pleasant tale. Master More was once sent in commission into Kent, to find out, if it might be, what was the cause of Goodwin Sands, and the shelf that stopped up Sandwich Haven. Thither came Master More, and called the country before him, such as

* Lord Chancellor Sir Thomas More.

were thought to be men of experience, and men that could most likely best certify him concerning the stopping of Sandwich Haven. Among others came before him an old man, with a white head, one that was thought to be little less than a hundred years old. When Master More saw this aged man, he thought it expedient to hear him say his mind in this matter; for, being so old a man, it was likely that he knew most of any man in that company. So Master More called this old aged man unto him, and said, 'Father, tell me, if you can, what is the cause of this great rising of the sands and shelves here about this haven, which stop it up so that no ships can arrive here? You are the oldest man that I can espy in all this company, so that if any man can tell any cause of it, you it is likely can say most in it, or at least more than any other man here assembled.' 'Yea, forsooth, good master,' quoth this old man, 'for I am well-nigh a hundred years old, and no man here in this company is anything near unto mine age.' 'Well, then,' quoth Master More, 'how say you in this matter? What think you are the causes of these shelves and flats that stop up Sandwich Haven?' 'Forsooth, sir,' quoth he, 'I am an old man; I think that Tenterden steeple is the cause of Goodwin Sands. For I am an old man, sir,' quoth he, 'and I may remember the building of Tenterden steeple, and I may remember when there was no steeple at all there. And before that Tenterden steeple was building, there was no speaking of any flats or sands that stopped the haven, and therefore I think that Tenterden steeple is the cause of the destroying and decay of Sandwich Haven.'—*Bishop Latimer.*

OBITUARY.

DIED, May 1st, aged 37, after a most severe and lingering illness, under which he has been suffering for many months, Mr. W. C. Sibbald, of Biggleswade, M.R.C.V.S. "During his residence there he had gained the esteem of all his friends, and, as a professional man, the greatest confidence was placed in him, arising from the successfulness of his treatment of diseases, and his attention to business."

We have also been informed of the sudden death of Mr. Robert Molyneux, M.R.C.V.S., of Kilkenny.

Mr. Molyneux obtained his diploma in 1829, and Mr. Sibbald in 1841. Thus one after another passes off this busy stage of life,

"His part enacted and the curtain fallen."

THE
VETERINARIAN.

VOL. XXX,
No. 355.

JULY, 1857.

Fourth Series,
No. 31.

Communications and Cases.

ON THE VEGETABLE ALKALOIDS.

It is not saying too much to assert that modern chemistry, in devising means to abstract from vegetables their active principles, has materially contributed to the science of medicine, by furnishing therapeutic agents on which reliance can always be placed, arising from the uniformity of their composition.

Naturally these principles exist as saline compounds, consisting of an acid and an alkaline base, to which latter the term *alkaloid* has been applied. This salifiable base has been isolated by the chemist, and found to possess the leading characters of an alkali, namely, that of restoring the blue colour to reddened litmus, and neutralizing acids. But what more especially distinguishes these bodies is, they contain nitrogen as one of their constituents. Besides which, the usual elements of organic substances, carbon, hydrogen and oxygen, are also present; and the equivalent number is always very high. They have likewise a bitter taste, and are but sparingly soluble in water, but more soluble in alcohol, and readily so in the diluted acids; the compounds thus formed being decomposed by the true alkalies. Professor Graham considers ammonia to be a type of them.

From the analogy that obtains among these principles a general method for the separation of the base is applicable to nearly all of them. This essentially consists in boiling the vegetable substance in acidulated water, filtering and neutralizing either by ammonia, lime, or magnesia, when the alkaloid is precipitated; after which it is purified. Benzole, or the bicarburet of hydrogen of Faraday, obtained by the compression of oil gas, has been lately employed for this purpose. It is a clear, volatile liquid, having the odour of

coal gas, but more aromatic, insoluble in water, and highly inflammable. To apply it an acid infusion of the barks or the vegetable is first made; then potassa is added to render it alkaline; after which one fourth its bulk of benzole is to be shaken with the solution, which takes up the alkaloid. The benzole is then to be distilled off. Modifications of this plan are resorted to for the different alkaloids, according to statements made by Mr. J. Williams. But by whatever process the separation may be effected, it is necessarily an operose one, and being so it becomes expensive, if the agent is required in an absolutely pure state; while as yet it is an unsolved question in therapeutics, if it be desirable to remove the alkaloid from its natural combination with an acid before using it medicinally. There can be no questioning the fact that the principle thus obtained becomes freed from many extraneous matters, some of which are inert; yet before it can really produce its effects, it has to be united to some acid, so as to render it again a soluble salt, or this change takes place in the stomach and intestines, which is necessarily at the expense of the vital force; the pure alkaloids, as a class, being only partially soluble, as before remarked, and therefore not very active compounds, abstractedly considered. But is this combination always so desirable a one as that which nature furnishes us with? And does not the principle while being separated undergo some modification as to its action on the organism?

We have been led to ask these questions from perusing the article on Aloëtime, or Aloine, by M. Robiquet, inserted in our number for September last; and at page 43 of the present volume will be found another paper on the same subject by Mr. T. B. Groves, both of whom question the purgative powers, *per se*, of this so-called active principle of aloes.

Aloine may not, critically speaking, be one of the alkaloids, there being no nitrogen in its composition according to Robiquet, yet other chemists state the contrary. Still it is closely allied to them, for Meisner considers it to possess alkaline properties, and Winkler regards aloes itself as a neutral vegetable salt; this substance being the base with which an acid is in union in the extract. On this account there have not been wanting those who, considering this to be the active principle in aloes, have thought that if it were separated from the resinous matter with which it is naturally combined, a more desirable purgative for the horse would be obtained; that is, one less irritating in its action, and less likely to affect the urinary organs; the full influence of the agent being then determined to the intestines, without any

diversion to the kidneys. Such views, it appears from the paper referred to, cannot be now entertained, aloine not being very active when given alone or unchanged. And this statement made by M. Robiquet is borne out by the article already referred to. It is only when this principle has become oxidized, that it can be said to possess any purgative properties whatever, and this may be brought about in various ways, such as by the union of oxides, and especially by the action of air and heat.

Doubtless an analogous conversion is effected in it as it passes through the alimentary canal ; this differing in degree, depending on certain circumstances, and hence the variable-ness of its effects as a purge.

For our own parts we have long been advocates for the natural combination as it exists in certain plants, obtaining the principle by simply expressing the juice from the vegetable, then evaporating to a certain consistence, and preserving the same by the aid of dilute alcohol. But all our medicinal plants are not indigenous, and, therefore, we are more or less dependent on foreign sources for furnishing us with many of them ; and these being, of course, in a dry state, then it is that the science of chemistry steps in and separates the more active from the less active parts, giving to us agents of great power when judiciously employed. Nevertheless, until some more facile and less costly mode of obtaining the alkaloids be resorted to, we feel assured that as a class they will not be generally used in veterinary practice ; although a few of them, from their potency, may be employed.

Some persons have preferred the seeds of plants as therapeutics, since they are less liable to variation in their composition, and the processes by which they are perfected are performed by nature herself on fixed and uniform principles. They are also less dependent for preservation on the artificial modes of drying, which are necessarily had recourse to for other parts of the plant, and consequently they are not so apt to become decomposed. Many of them, likewise, contain more of the active principle of the vegetable.

This much is certain, that the processes for the procuration of pharmaceutical compounds from vegetables cannot be too simple. Either the expressed juice, or the pulverized leaves, or seeds, or roots, being employed ; for even the formation of a tincture, valuable as this form is, will sometimes change the mode of action of a vegetable substance. Still the addition of alcohol, as a preservative, may at times be found necessary.

Mr. Bentley, pharmaceutical chemist, has proposed a plan

by which a preparation of uniform strength, certain in its action, and not decomposable by light, may be obtained.

It consists in taking the plant and subjecting it to the action of a powerful press; the juice that flows out is allowed to stand for twenty-four hours, so as to deposit the fæculent matter. Alcohol, 56° over proof, is then added, in the proportion of four fluid ounces to every sixteen fluid ounces of the juice; which is quite sufficient to render its preservation complete, and to throw down any mucilage which may be mechanically suspended.

After standing twenty-four hours, the juice is filtered through bibulous paper (that made from wool is the best), and it will be found to retain the whole of the virtues of the plant for any length of time. In this way fluid extracts of

Aconitum (*Monkshood*),
Anthemis (*Chamomile*), and
Belladonna (*Deadly Nightshade*),
Colchicum (*Meadow Saffron*),
Conium (*Hemlock*),
Digitalis (*Foxglove*),
Hyoscyamus (*Henbane*),

may be readily made by our professional brethren, nearly all these plants being indigenous and easily procured; and thus they will obtain therapeutic agents on which reliance may always be placed by them.

COMMUNICATION

From R. VINES, M.R.C.V.S., Nassau Street, London.

GENTLEMEN,—In your published report of the late annual meeting of the veterinary profession it is stated that “Mr. Vines rose and proceeded to make a lengthened statement relative to his early connection with the Royal Veterinary College, and his endeavours at all times to advance the interests of the profession, but which he did not think had been acknowledged or appreciated, nor had he been fairly or kindly treated in being kept out of the Council of the Royal College of Veterinary Surgeons. What had he done to merit this? Yet he could only obtain a very few votes year after year. He thought he might prove useful to them, and was desirous of being so, for he had long been a teacher, and intended being so again perhaps, having a son about to enter the profession.”

Also "that the Chairman here called him to order on account of the irrelevancy of his remarks, and soon after he resumed his seat."

I am willing to admit that the substance of the above is perfectly correct, so far as it regards the general statements then made by me, but if what I said had been given more in detail, my observations would have been much better understood by the body of our profession who had not an opportunity of hearing them.

I reminded the few members then present—about thirty-one in number out of a body of more than 2000—that we had been told at various times that unless we were unanimous we could not expect the advancement of our profession to take place. And, as a proof of my statement being correct, I here introduce an extract from the Annual Report, as follows :

"In conclusion, the Council regret that another year has passed without the veterinary profession having become that united body which was so fondly anticipated on the obtaining of the Charter. May the question be asked, for the last time, Whose fault has this been? and may it be replaced by this,—How can it now be accomplished? If party views are abolished, if personal differences are laid aside, and if the one great and good object—the advancement of our profession—is steadfastly and disinterestedly kept in view, no power on earth can prevent its accomplishment; and we might then hope to hail the approach of the period when it shall be considered an honour to become a member of the Royal College of Veterinary Surgeons."

After I was called to order, Professor Spooner observed that "allusion was made in the Report to parties. Where numbers of individuals met together, 'party' always did and always would exist. Party, indeed, rightly conducted was the very essence of legislation, but was too often rendered the matrix of abuses and all kinds of disturbance. He did not object to party, but he objected strongly to the personal animosities and bickerings which had prevailed among them as a body, and he hoped that these would give way to a united and anxious desire to support each other in the position they are all desirous of attaining—that of honorable members of a liberal profession."

From the above it appears that since obtaining the Charter things have not gone on so satisfactorily in the governing body of the profession as could have been expected, and if so, the fault is not mine, I having been excluded from having any voice in the management of our affairs;

therefore no blame can be laid to my charge. *I am of no party*, except for *liberal improvements and the public good*. But I am sorry to state that the majority of our profession take little trouble as regards its interests. Had they felt more anxious they would have attended the annual general meetings, and then there would have been less chance of our becoming a close corporate body.

Is there not room for complaint that out of more than 2000 members only about thirty-one think fit to attend the general meeting, inclusive of the Council of twenty-four?

Had our profession felt more interest in their affairs they would not only have attended and voted me into office some years since, but also have given me a vote of thanks for the professional works I have written, and the expense I have been put to—of more than £300—for the advancement of our science; more particularly previous to 1838, and during the fourteen years I was an officer of the Royal Veterinary College, under the late Professor Coleman; during which time I superintended the instruction of more than 700 pupils. Further, I should not only have been a member of Council, but also one of the Board of Examiners for the granting of diplomas. My name is well known to the public, and I am proud to say I am well respected. I consider myself fully competent and respectable enough to fill that situation, and as it regards my general character, no one I am confident can state I was ever guilty of an unjust action. Therefore I consider party, and a *small party* too, has been the cause of my exclusion from having any voice in the management of our affairs, and if that party will reform and take the advice of Professor Spooner, it will no doubt become a large one, and we shall ultimately obtain the support we are so anxious to secure. Recollect, if a professional body, at the present day, wishes to obtain support, it must adopt liberal measures, and not depend too much on Government having granted a Royal Charter; which was intended not only to add to our respectability as a body, but likewise to give us encouragement in our endeavours to advance veterinary science for the public good. And without these objects are kept in view, and we act liberally towards each other, there is no advantage in our having a Charter.

It is stated “I attended year after year and only obtained a few votes.” This statement is not correct. I have not attended for several years, because I well know how things have been managed; and the last time I did attend it was for the purpose of giving some advice, and informing the meeting that I had an idea of becoming a teacher on my own account;

and which I consider I have a right to do, independent of our Charter, which includes two schools, one in Scotland and the other in London. The former has for some years past acted independent of the Charter, and the latter, some time since, threatened to adopt the like course, and also again on a later occasion (see *Veterinarian*, June, 1837, p. 557); therefore, should both these schools refuse to send pupils for examination before the board of the chartered body, and the London school adopt the same course as the Scotch, namely, having an examining board of its own, then our chartered body—the Royal College of Veterinary Surgeons—will have no pupils to examine, and the veterinary profession will be placed in nearly the same position as it was previous to obtaining the Charter, and pupils will be considered as competent to practise after having presented themselves before a respectable body of examiners selected by either school.

I did not attend the last general meeting for the purpose of being placed on the Council, for I left the moment the voting commenced; neither did I solicit a vote from anyone; although I was one of the first that subscribed towards obtaining our Charter; and well I have been rewarded.

I do not wish to see the above state of things carried out, although it would not injure me; but having one son already a pupil at the Royal Veterinary College, and another to enter when of a fit and proper age, I would rather that all the advantages we have under the Charter should be fully realised.

To the Editors of the 'Veterinarian.'

MEMOIRS OF A VETERINARY SURGEON. THOUGHTS ON NASAL GLEET.

By Mr. THOMAS GREAVES, M.R.C.V.S., Manchester.

(Continued from p. 259.)

My former paper was devoted to the consideration of nasal gleet resulting from *artificial* causes. I now purpose considering nasal gleet arising from *natural* causes.

If veterinary pathology has for its object the detection of disease in a dumb animal, and the proper mode of treating and curing that disease, it must be evident that the practitioner of veterinary medicine is pursuing a calling which

demands from him no ordinary sagacity so as to enable him correctly and successfully to discharge those duties. The subject I have chosen is one that occasionally places the practitioner in an embarrassing position, and requires the exercise of much consideration and discretion in the opinion he may be called upon to give.

NASAL GLEET EMANATING FROM NATURAL CAUSES.

By far the greater number of these cases, in their incipient stage, are simply a continuation of catarrhal discharge in an unhealthy subject. This is evidently the predisposing cause. The membranes of the head and nostrils have lost their tone to such a degree that they are unable to reassume their former natural and healthy function, and the secretion now escapes passively from the surface of the mucous membrane, the villi, follicles, or secreting mouths of which have become so much weakened, relaxed, and elongated, as to have lost all sphincter power over the secretion, which at this early period is of a whitish mucous character, flaky or foamy, and free from smell. It is also very irregular in quantity; but in course of time it becomes offensive. At times the discharge is so slight and scanty as to be scarcely worth notice; and at other times it pours forth all the abundance of the eruption of pent-up channels, bringing in its current matters solid as well as fluid. I think this is the plainest and most complete evidence that can possibly be given that the disease is in a cavity; and the inference is, that that cavity wants exploring, and the internal surfaces thereof healing. As the discharge continues to flow over the surface of the membrane, it, in its turn, adds to the irritation, and tends more and more to increase the virulence and inflammation, until, in process of time, softening and decay of the surface takes place, or, in other words, ulceration is the consequence, when the lymphatics partake of the irritation, and the glands become affected with the poison. This particular weak state of the membrane may be confined to only one nostril, and the part affected be some small space, consequent upon this part having been more severely inflamed during the period when the catarrh was at its height, or because it was possessed of a higher degree of susceptibility than the rest; and as the catarrh subsided, and a more healthy tone returned to the membranes of the head generally, this particular portion could not rally, nature of herself not being able to recruit her energies and restrict the flow of the secretion. We sometimes find it manifests extreme resistance and obstinacy to treatment. It will for a time

defy any and all the measures we can bring to bear against it, and it is also observable that the very remedies which prove successful in one case will sometimes have the very contrary effect in another. As the disease advances, the sublingual lymphatic glands increase in size, the appetite fails, the condition wastes, a cough, hollow and cavernous, is heard, the patient becomes hidebound, and more and more dull, evincing very considerable pain in his head; the Schneiderian membrane becomes of a slightly violet hue from venous blood in the membrane, or is blanched, its fibres softened, flabby, and pale coloured, and thinly suffused with a yellow serosity or æriform fluid, which sometimes is frothy and spumous; the integument upon the angle of the mouth, alæ, and false nostrils is corrugated and drawn up, and a quivering motion is frequently perceived in it; a great tendency to coldness of the nose, face, and ears exists, and occasionally there is the appearance upon the membrane of numerous ecchymose spots, with patches of redness. The case is now assuming a more dangerous aspect; the discharge becomes purulent in its character, acquires tenacity, and clings like glue about the hairs that fringe the nostrils. As the disease progresses, the membrane becomes more and more unhealthy in appearance; small straw-coloured stars present themselves underneath it and within the folds of the alæ nasi, and there appears to be a virus, or venomous matter, rising like vesicles, surrounded by an areola, on it. These are ulcers in embryo. Still the case is not yet one of glanders, nor past recovery. I have had them in this state, and all the unfavorable symptoms have yielded and complete recovery resulted. But unless a change takes place at once for the better, these small malignant vesicles will burst, and foul, dingy-pink, bloody ulcers appear. The animal's snuffing foretells the scabby state high up in his head, and the swelling about the lips and nostrils will indisputably proclaim that farcy, as well as glanders, has supervened; and it is now our duty to destroy our patient. The disease may assume this character in a week or ten days, or it may be three months after the attack of catarrh, and in some cases even years.

Treatment.—Having ascertained the existence of the evil, and thoroughly made ourselves acquainted with its true nature, we must now take into consideration the treatment to be adopted. Presuming the catarrhal affection to have existed for ten days or a fortnight, all the febrile symptoms to have subsided, the cough almost gone, also the soreness of the throat, and the appetite returned, but the discharge from the nostrils continuing, it is now time to change our

tactics. Instead of employing the vapour of hot mashies, which is so beneficial in a recent attack of catarrh, we must now not only cease to encourage the discharge, but adopt means calculated prudently to check it. My plan to effect this is as follows: I cease giving mashies of every description, and allow a liberal diet, consisting of corn, beans, and sweet hay, withholding green meat and carrots. I blister underneath the throat, whether this part has been previously blistered or not; stimulate the ears; see that the skin and extremities are kept warm; and administer tonic medicines. I have great faith both in iron and copper, combining their sulphates with gentian and ginger, made into a ball; and to this I add the all-important item of *cool fresh air* and light. Possibly a word of caution may be here permitted. Some persons employ soft soap as a material to make up their masses. Here it should not be used, as it would decompose the metallic salts, and render the compound nearly inert. I would give the above agents twice a day, for a day or two, and if no improvement is effected, give them three times a day; if then the discharge still continued to increase, I would not hesitate to give as much as four drachms of the sulphate of iron, with two of the sulphate of copper, two and three times a day. I keep up inflammation in the skin of the throat by repeated blisters; and should the case prove obstinate, I now clip off the hair over the frontal and nasal sinuses, and blister severely and repeatedly. I have great faith in powerful counter-irritation immediately over the affected membrane. I know some scientific practitioners pooh pooh this, but my experience has afforded me abundant evidence of its very great utility. It appears to arouse, and in some degree to divert, the energies of the circulatory system, which is too much engrossed in the diseased action. I am also of opinion that it has a bracing effect upon the system generally, and improves the quality of the blood. Nineteen out of every twenty cases may be restored by these means.

I have employed every agent recommended, and have had abundant opportunities of satisfying myself of their different degrees of efficacy, and am come to the conclusion that the above plan of treatment is without exception the most successful. It is surprising the large quantities of the above medicines that may with impunity be administered, provided the horse eats moderately well. I have given as much as two ounces of sulphate of iron, and one ounce of sulphate of copper, daily, for three weeks, before the disease has yielded; when the membranes have assumed a perfectly healthy character, and have continued so for the remainder

of life. I think there is no disease that is such a tell-tale one as this. If you relax in the strength of your dose or its frequency, if the groom neglect to give the corn, or the quantity is decreased, all improvement ceases, and the case will speedily degenerate. I wish to lay stress upon this point, for unless the medicine be faithfully administered, and corn diet liberally allowed, the case will certainly end in disappointment and discredit. But be it distinctly understood, I am not one of those who entirely ignore the inherent powers of the animal economy, or estimate their share in the triumphant result as either slight or unimportant; for although I consider that in this disease the above treatment, faithfully adhered to and persisted in, is absolutely and essentially requisite, under almost every other condition I have the greatest faith in nature's capabilities, if properly aided, over any treatment whatever.

Use of Draughts.—It has been long held necessary to administer this medicine in a fluid form; but I have never once seen any evil result from its administration in that of a soft, fresh-made ball, although I have seen very serious injury follow its being given as a draught. It must be remembered, that the doses are so frequently exhibited, and so likely to be continued for some days at least, that the fauces and larynx become irritated and sore, when it is given as a liquid, and very soon it becomes apparent that the animal cannot swallow; then the medicine is either wasted, or else some portion of it finds its way down the windpipe, and the chances are you lose your patient. I am decidedly of opinion that small portions of a draught get into the lungs, I mean in our general practice, much more frequently than we are at first inclined to believe; and they there create such an amount of injury as we are incapable afterwards to remove.

Blistering.—I have the greatest confidence in the benefits resulting from severe and repeated blisters over the affected part as an adjunct to the general treatment.

Trephining.—In all cases where the discharge continues for a long time, it must be inferred that some cause for it exists. If it be ascertained that the animal has a decayed tooth, extract it; if not, explore the cavities. Trephining is an operation frequently found absolutely necessary to effect a cure, and I have seen it perfectly successful after all other means have failed.

Syringing.—Some practitioners are in the habit of injecting various solutions up the nostrils. I have a strong objection to this mode of treatment, although I confess I have seen good effects follow a small quantity of some astringent fluid

gently poured down the nostrils. It will create irritation, and set up a new inflammation, when healthy action in the membrane will be restored. Of course I always syringe pretty freely when I trephine.

Is the disease contagious?—I am of opinion that this disease is not in the least contagious until it has assumed its most virulent form, and then it is highly so. Indeed, it then may be designated glanders. It was the late Professor Coleman's opinion, that not one case in ten thousand arose from contagion. It would be well, perhaps, to remember, that contagion is the result of actual contact with the virus, and infection arises from the inhalation of an atmosphere impregnated with exhalations from diseased animals, and the duty of a veterinary surgeon is to—

“Cast round the world an equal eye, and feel for all that live.”

THE DAIRIES OF LONDON IN CONNECTION WITH UNWHOLESOME FOOD.

By EDWARD MAYHEW, M.R.C.V.S., London.

THERE is, at present, a great noise made about the sale of diseased meat. The traffic in such an article has been carried on for years; yet, till now, nobody seemed to notice the notorious fact.

Officers of health have lately been employed to detect the offensive trade. However, what are their precise qualifications for the office, which is thrust upon them, I am un-informed. Their noses seem to be the organs principally employed; though many people may question the necessity of a costly medical education to discover a stink. Probably persons non-professional could detect unwholesome flesh, after it had made an approach to putrefaction.

The inspectors of markets are generally understood to owe their appointments to private interest. Of late, however, the slumbers of this order of persons have been broken by an unreasonable demand for their activity. Rules have been laid down for recognising the beef of an ox that has died of disease—the state of the viscera, and of the large serous cavities, being alluded to, as decided evidence in this particular. Now, every butcher knows that oxen may exhibit during life the most perfect health; nevertheless, after death, more than one entire lung may be found adherent to the in-

vestiture of the ribs. Fatty liver, enlarged spleen, and strange abscesses may exist, and needles, knives, &c., are found very frequently in the abdomens of creatures that, when alive, appeared sleek and perfectly easy in their minds. The slaughter-house, in short, brings to light facts which never were suspected during life, and very much property would be flung to the dogs, if every ox that did not after death exhibit internal parts consonant with perfect health were to be condemned as unfit for human food.

The market may require overlooking; but are all other places to be neglected? It is evidently wiser to stop the source, than to interfere only with the supply. The source, however, none appear to have meditated annihilating. It is held sacred, as it were, and its produce is allowed a chance of escape to the tables of respectability.

Now the source of half the diseased beef, which finds a ready market in London, is the milk-shed. I, some few years ago, visited several of these places, and I can bear evidence to their abominations. I remember only one that was even decently clean. The great majority were filthy in the extreme, low-pitched, undrained, and not ventilated. They were such places as, under no sanitary law, should be for a moment permitted to exist in a crowded city.

The animals are in these sheds huddled together, breathing the steam given off from one another's bodies, sleeping upon their excrement, and befouling each other as they stand. They are so closely packed, that all cannot simultaneously lie down, and the beds beneath them are generally rotten with excretions.

These places are of course the centres of disease. The tales told about the losses of some milkmen almost seem preposterous. Great as the profits of the trade doubtlessly are, yet these gains can hardly stand against the fatality of the cow-shed. Few milkmen, therefore, become rich, notwithstanding their notorious adulterations. The privilege to sell water at fourpence a quart, appears to be a paying business; still, though most of them deal largely in the liquid named, I have never heard a single instance of a cow-keeper making his fortune.

This circumstance speaks volumes for the average mortality among the beasts. It also testifies, that the men alluded to are not in circumstances to withstand temptation. Cows, for the most part, only leave the London sheds to make beef for the London markets. This is the natural course of events. A cow is expected to give milk, till want of exercise, hot air, and stimulating food have rendered her fat enough to pay

for slaughtering. She is then sold to the butcher, and becomes prime Cockney meat.

Such is the fate of the beast, supposing it to live through all the dangers its flesh is heir to. The great majority, however, do not survive long enough to become very sleek. Disease fixes on them, and cow-keepers never employ veterinary surgeons. The reason is to be found in the very great convenience of the dead-market. It is far more profitable to slaughter the animal that is unhealthy, and to send the carcase to the dead-market, than to pay for medical treatment. This is so commonly done, that it is now a speculation, how much of human sickness is attributable to unwholesome food?

But, suppose a cow to die, as they sometimes will in the night? The next morning the animal's throat is cut, to let out as much blood as possible, and then a butcher is sent for to dress the carcase. The flesh is sold. It all goes to support the dead-market. The carrion is purchased cheap by the needy; or, if too bad to be cut into joints and publicly exposed, it is privately disposed of to some large purveyor of the various kinds of sausages.

It is not too much to assert, that almost all the impure meat consumed in London is supplied by the London cow-sheds. A certain portion may come by rail from the country; but there are few places that can command a more convenient and less-overlooked market than the metropolis.

So much for the supply of meat. The number of deaths occasioned by its consumption has not been estimated; but every one is aware of the great mortality among the infants born in London. Such fatality has been reasonably attributed to the nature of the milk, which constitutes a large proportion of their food.

A recent number of the *Veterinarian* contained a detailed account of the state in which milk is drawn from cows that have been long inhabitants of the shed. It becomes tinged with various colours, and deficient in its nutrient properties. The London milkman corrects these defects, and sells the diseased secretion as wholesome food for the children of respectability.

Well, but how are these things to be avoided? The evil is easily to be removed. *Make it penal for any person to harbour a cow within the metropolitan district.*

This proposal doubtless appears harsh. Is it, however, without precedent to warrant it? Pigs are banished from the bills of mortality. The reason is, because their presence within the city was found, or believed, to be incom-

patible with health. Still children did not live upon the milk of the sow. Many porkers would only consume the atmosphere inhaled by one cow. The pig being bred only for its flesh, man has no inducement to cram thirty, or even more, under one low roof. The sow was not drained and drained until disease became its natural inheritance. It was not kept, perhaps, for years, and then, in its old age and contamination, slaughtered for human food.

There is then a precedent to justify making penal the keeping a cow within the bills of mortality.

We have yet to consider the inconvenience which would result and the benefits that would accrue from such a measure.

The cow in this country is not a beast of burthen. Its services are not likely to be required at any moment. It is simply prized on account of the milk it yields. That is all. Now, since the establishment of railways, milk has been largely sent to London. If the interest of the majority require pure, country milk, yielded by healthy animals, certainly that interest would warrant the introduction of a bill to the above effect. Were this measure made law, the source of impure flesh supplied to the London markets would be in a very great degree destroyed, the lives of many families would be conserved, the teas of all London would be benefited, and the atmosphere in those localities which most need such a blessing would be largely purified, for it is notorious that cows herd in thickly peopled neighbourhoods; the broad and open thoroughfares being too high rented to afford them a lodging. Life and health are surely worthy some consideration.

But let us now endeavour to ascertain how the contemplated law would affect the interest of the London cow-keeper. He would, in the first place, be deprived of the inducement to crowd many animals into a limited space. He would be saved from the continued loss naturally attendant upon such madness. Under this enactment, he would be spared the futile labour of endeavouring to make animals live in hot-beds of contagion during seasons of disease. He would be banished from a city, where contaminated air and deficient shelter are very costly, into the country, where such things are not only cheap, but to be obtained in purity. He would be freed from the temptation to sell the carcase of every beast that dies of unnatural treatment. The inconvenience of having to send a distance for a butcher would be some check; but, a better preventive, it is hoped, would be found in the improved condition of his stock, and the greater

weight of his purse. He might in the country grow rich, and with pleasure contemplate a healthy herd. The milk could be sent by rail to London. From the stations, it could easily be distributed over the town by means of those light carts which the vast majority of milkmen keep at the present time. The machinery is therefore ready; and were the law universal, serving all alike, very probably there are few cowkeepers who would object to the change.

Only there is one provision which must not be overlooked. The men are poor. Most have hired buildings, erected sheds, and taken long leases, looking forward to years of undisputed possession. The law of the land has approved their acts. If that law is now to be suddenly changed, these poor men must be compensated for any loss the alteration would occasion. The money required to do this could not be great. No land or material could in London be valueless; while the sums, awarded to the present occupants, would enable them to remove with comparative ease.

This single amendment in the custom of the present generation would do much to purify the London flesh-markets. Small animals would not generally pay for any great risk incurred; nor, is the temptation to dishonesty so great, when a pig or sheep dies, as when a cow falls. A poor man may have with difficulty scraped together the pounds required to purchase a prime milker. He brings her home; but also into danger. New in-comers are proverbially the most exposed in every London shed. Say the new purchase dies. Is it not a very great temptation for a poor man to view the loss of so much hard cash, and yet refuse to adopt the ready recourse, by which a portion of the money could be saved to him?

GLANDERS, AND THE AUTHORITIES OF CITIES AND TOWNS IN IRELAND.

By R. H. DYER, M.R.C.V.S., Waterford.

IT may not be out of place to ask you to insert in your journal, the following short history of a case which came under my especial notice during the year 1855.

A brown pony arrived from England, suffering with catarrhal symptoms, which were accompanied with tumefaction of the salivary glands. He only partially recovered, as a

nasal gleet was the sequela. The animal not being of much value, very little notice was taken of him.

A bay gelding, well bred and in good condition, the property of the same gentleman, was attacked with what was supposed to be strangles. In a few days, I found the nasal membrane full of ulcers, and all other symptoms confirmed my opinion as to the disease being glanders. My advice to the owner was to have the horse destroyed immediately, and to take steps to prevent the malady spreading. All my instructions were carried into effect with promptitude. The horse was destroyed, and examined afterwards. A worse case I never beheld. The whole of the Schneiderian membrane was diseased, as well as the sinuses, both frontal and maxillary. After the inquiries were naturally made as to the origin of the disease, I at once pointed to the pony, as the only solution to the question. The symptoms of the pony were certainly not such as to warrant me in stating he was glandered; but, at the same time, I considered it a suspicious case. I suggested the propriety, and, indeed, the necessity, of inoculating an ass with some of the matter taken from the pony. A young two-year-old healthy ass was purchased, and operated on. The ears and nose were the parts rubbed with the suspected matter. This was on the 6th of March, 1855. The ass was placed in a loose box, and fed liberally with oats, carrots, bran, and hay.

On the 12th of the same month, I called to see him, and found both farcy and glanders present. From this date to the 19th, he grew rapidly worse, when he died; this being thirteen days from the date of the inoculation to the time of death. I examined the ass after death, and the post-mortem appearances in the nostrils and head were similar to those of the bay horse before spoken of. The affair to me seemed as clear as possible, and I advised that the pony in question should be despatched without delay. The owner not liking to have him destroyed, presented him to a man in the country, who is famed for his knowledge of the healing art in general; but more especially the veterinary art. This "knowing one" patched him up, said he was cured, and sold him to a butter-merchant on the quay, where he was employed drawing a float to the steamers, the owner not believing the pony was in any way diseased, except that of having *sometimes* a running at the nose, which was considered "nothing." Both the second and third possessor were aware of the experiment which had been made with the ass. That, however, they took no account of at all. They would not believe that the pony, which was in such fair condition, did his

work well, and all that, could be the means of infecting any animal. In order, I suppose, to test my sincerity, the butterman on the quay, sent the pony to my establishment to get him shod. When I found the pony was in the forge, I desired he should be taken away, and never be brought upon the premises again. Some people, on the quay, complained that a glandered pony was allowed to mingle with other horses. No notice was taken of this, as the officials do not appear to have any instruction in such cases; and to set everything at rest, the butter-merchant took the pony to a veterinarian, who gave a *written certificate to the effect that the pony was not glandered*. Such is the way things are done here.

A short time since, a nobleman told me he was offered a pony, and, describing him, I cautioned him, repeating what had taken place with reference to the case. This nobleman told the owner what I had said, and so on, but up to the present moment he is perfectly assured of the non-contagious properties of the excreted matter about the nose of his pony. And I do not wonder at it, holding, as he does, a certificate, setting forth that the pony is free from disease.

A second case analogous to this occurred at a more recent date, viz., in the month of December last. I was directed to examine an aged mule, said to be labouring under a cold and cough, when I found it was frightfully glandered, and recommended the owner to have her destroyed immediately.

In the course of a week, the owner, a most respectable merchant in this town, called to inquire if I thought his mule was really glandered? I replied, there could be no doubt upon the case. He said, "I have been informed, you made a mistake about a pony, and I thought," said he, "it was just possible you might have made a similar mistake now." I, of course, thanked him for his politeness, and referred him to the notes I had made respecting the pony and ass. At this, he seemed convinced that no error was made; and then he told me, how the mule had been treated by a farrier belonging to the Artillery Corps then stationed in Waterford Barracks, and that in order to do the utmost for the mule, the soldier had engaged a stable almost adjoining the barracks, where it was kept while under treatment. The farrier said, in three days more (I suppose the charm had not time to act), he should be in a position to give a decision upon the case. I need not state, the owner of the mule instantly gave orders to have it destroyed. Prior to this, I went in search of her, and found a knacker had purchased

the animal, and destroyed it that day. I also wrote a note to the commanding officer, stating what information I had received, and recommending him to sift the matter; also, informing him what risk the man was running, in consequence of his being totally ignorant of the nature of the disease he was trying to subdue. A short time after this, I was told that several horses were attacked with glanders, and were shot, belonging to this corps.

I could furnish many other instances, but I think these are sufficient to show that some measures should be taken to prevent disease being disseminated about the town in the way it seems to have been in Waterford. I do not see why a town such as this is ought not to be as strictly watched as the more populous and important towns of England; perhaps your always ready pen, if used in this cause, may do much to effect so desirable an object.

LACERATION OF THE VAGINA DURING PARTURITION IN A MARE, WITH PROTRUSION OF THE COLON. DESTRUCTION OF THE MOTHER, AND SUCCESSFUL REMOVAL OF THE FOAL.

By WILLIAM SHIPLEY, M.R.C.V.S., Great Yarmouth.

ABOUT noon, on the 16th of April last, I was requested by Mr. Press, of Southtown, to attend a mare showing symptoms of foaling, her gestatory period having elapsed about a week. I returned with him, and the distance being but short, we soon arrived. I found my patient, a half-bred bay mare, aged, in a nice warm orchard, endeavouring to effect the parturient act, lying down and straining every now and then. A very small portion of the membranes was hanging from the vagina, the urino-sexual orifice was unusually constricted, and the general appearance of the parts was not that of parturition being so near at hand as thought. I therefore allowed her to remain for a little time to see the result of her own efforts. However, in the course of an hour, there was no appearance of the foal; but the pains had become more regular and intense. (I should have stated that the amnion was ruptured just previous to my arrival, and a very large quantity of fluid liberated.) I now had her led into a loose box well littered with straw, and at once proceeded to examine her. I found the parts remarkably small and narrow, and a large

live foal with the fore legs in the vaginal passage, the head doubled to the right side, which, after some manipulation, and partly returning the legs within the uterus, I succeeded in raising up, by getting fast hold of the jaw with my right hand, when I found that it was scarcely possible, from the scarcity of room, to get it forward. During my examination, I several times brought my hand in contact with something, the character of which I could not determine, from its being covered with the membranes, a part of which I almost fancied it must be. The mare, too, seemed to be very much exhausted for the comparatively short time my manipulation was carried on, and she threw herself violently down once or twice, and then had some difficulty in rising. Cords were now fastened to the fore limbs of the foal, and two persons, with myself, applied our united strength during the prevalence of the throes, pulling steadily in a downward direction, the animal being at the time standing, when she suddenly threw herself down on her left side and violently strained, forcing out from the vagina what on examination proved to be a portion of the single colon, covered by part of the chorion. I have no doubt it was this that I had felt; but its being so enveloped in the membranes sufficiently accounted for my not recognising the true character of the case before. As a matter of course, I at once explained the fact to the owner, stating it to be a hopeless case so far as the mare was concerned, and to remove the foal *per vaginam* would be to sacrifice its life, which I had been contemplating, as I felt confident that one, if not both the fore legs, would have to be removed. Taking the matter into consideration, and not having chloroform on the spot, I recommended the mare to be shot, and to take the foal from out the uterus by an opening in the abdomen. This proposition was at once acceded to. The fatal bullet having done its work, I made a longitudinal incision along the linea alba, and having exposed the uterus, opened it anteriorly, and extracted a fine healthy mare foal, which is doing well up to the present time. It was at first fed wholly on cows' milk, but now lives principally on oatmeal and linseed gruel.

A post-mortem examination of the mother developed a rupture of the walls of the uterus, about five inches in length, situated at the superior part, and inclined to the left side, just anterior to the os uteri, in a direction with the short diameter of the organ, or rather more in an oblique direction, and part of the single colon and rectum protruded through to a considerable extent. The meso-colon and meso-rectum were also ruptured about six inches in length. Whether

these lesions were caused by her throwing herself down, or from the violence of her throes, I know not; all I can say is, that I never remember an animal exert the force to expel the foal that she did for a short time. Nothing in the shape of an instrument was used by me, which I was very glad of, as it might be thought by some persons to have been injudiciously handled.

TRACHEAL POLYPI.

By G. FLEMING, V.S., 5th Battalion, Military Train.

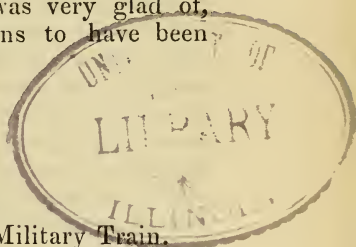
BELIEVING the occurrence of polypi in the air-passages, from the larynx downwards, to be somewhat rare, I take the liberty of forwarding you for insertion the following account of a case that lately came under my notice:

A brown horse—one of a number transferred to this, from another battalion, whilst at Aldershot, was, immediately upon his arrival, found to be incapable of performing his duties, in consequence of a remarkable difficulty he had in breathing, altogether different from that usually manifested by *roarers*.

The only information I could obtain of his previous history was, that a long time ago he had shown symptoms of pneumonia, for which he had been treated, but that he had only partially recovered, as he was always, from that time, easily distressed by work, and coughed a great deal on being taken from the stable into the cold air, and *vice versa*.

On the 4th of April, I had an opportunity of examining him carefully, and the very first observation made by me indicated some obstruction in the air-passages, as, when standing quietly in the stable, he could be heard breathing some yards off; and on the least active exertion, moving even a few paces at a walk, the respirations became hurried and laboured, the countenance betrayed anxiety and distress, and a shrill, whistling sound was heard, *louder* in expiration than in inspiration. When changed from a hot to a cold place, or from a cold to a hot one, he was immediately seized with a violent, dry, husky cough, which threatened to suffocate him.

Auscultation revealed, behind the scapulæ, exaggerated bronchial, and very faint, indistinct, vesicular respiratory sounds. At the point of the sternum, and from thence to the middle third of the trachea, this sound was much increased,



as if the tube was contracted upon itself, or some obstacle existed somewhere from this part up to the larynx; a dry, acute râle being heard, such as might be produced by blowing through a small paper tube. Nothing could be discovered by direct exploration of the upper part of the larynx and fauces; but on manipulation of the trachea, at the part where the sound became magnified, there could be detected externally a thickening of the tube and of the textures around it; and the skin upon it appeared as if it had been contused some long time before. If pressure was made by the fingers, though ever so slight, either upon or around this enlargement, the horse flew back, and appeared for some minutes as if in great agony. Nothing else being noticed then, I came to the conclusion that some of the cartilaginous rings were fractured or displaced, and that all treatment was useless, especially as the horse was so light in carcase that he would be of no utility in a corps where strength is so much required for draught, and I had him accordingly put into the sick stable until an opportunity should present itself for having him cast. In consequence of the pain he experienced when taken out of the stable, I ordered him to be always kept in, not even allowing him to be led out to water. He fed and rested well, acquired fat rapidly, and, except in his breathing, appeared a perfect type of good health.

On the morning of the 13th of April, however, by some mistake on the part of the stable orderly, he was sent to the water trough, about 500 yards off, and on the way he began to jump about in a lively manner, when all at once he gave three or four violent coughs, stood still, and then commenced breathing in a most distressing way.

He was instantly taken back to the stable, and I was sent for.

On my arrival I found him in a dying state, with bright-red arterial frothy blood flowing from his nostrils and mouth at every gasp for breath, which act was attempted and accompanied with a sort of scream, protrusion of the tongue, and the eyes apparently starting from their sockets. Every muscle of respiration appeared to be strained to the utmost, and each inspiratory or expiratory effort seemed only to increase the paroxysms, until the whole body was in a profuse perspiration.

Nothing could be done to alleviate those painful to witness symptoms, for the end was fast approaching, and no doubt could exist in the mind as to the nature of the lesion; yet I thought of attempting to perform tracheotomy immediately, under the supposed diseased part of the trachea,

but ere this could be done the horse fell and died immediately.

Post-mortem.—This was made in a few minutes after death, and was commenced at the larynx. All the muscles of the latter were found in a state of atrophy—the crico-arytenoideus posticus muscles especially, having suffered from fatty degeneration, causing the cartilages they ought to maintain in a horizontal direction to fall across the opening of the larynx in an oblique line.

On opening the trachea—which was filled with bloody froth—and exposing its internal surface down to the part where the external thickening had been discovered, two polypi were found growing from the *anterior* wall of the tube, and of such a size that when the cylinder was closed, as in a natural state, the little finger could scarcely be passed through the opening left by them. They were of a spongy texture, and of a dark-red colour, and around their pedicles, which were very short, the mucous membrane was very much hypertrophied, and injected with venous and arterial ramifications, all converging towards the roots of the tumours.

The external enlargement was due to an increase, partly ossific, in the fibro-cartilaginous rings and in the textures immediately surrounding these parts. The lungs were highly congested, and the bronchi filled with extravasated blood from some ruptured vessels in the lungs, and which had, no doubt, been the cause of death.

The only other observation made was the fatty state of several of the organs contained in the abdomen and thorax. Of these the liver and the heart were remarkably so, probably from the non-elimination, or incomplete combustion, of the carbonaceous constituents of the food.

I think it extremely probable that an injury to the trachea, causing a certain amount of inflammation in its mucous and sub-mucous textures, was the cause which led to the formation of the polypi found there after death; and it is very likely that, at the time of its occurrence, it was mistaken for pneumonia, and thus the only chance of treating and subduing this inflammation was lost. Death would have been caused in a very short time, even had the horse never been moved out of the stable, as the fatal impediment to that important function, breathing, was daily increasing; but the sudden exertion, and the urgent demand for a larger quantity of air than was usually required, brought about another form of dissolution different to the one that would have happened had he been kept in a state of quietude.

FISTULA OF THE PAROTID DUCT.

By the Same.

ONE of the worst cases of the above I ever remember having seen, existed in a fine young grey mare, given over to the Military Train at Woolwich by the Royal Artillery, on the 28th of April, along with a number of other transferred horses. She was recommended to be cast, as the injury had been done many months before, had resisted many attempts to repair it, and was now in a chronic state. Certainly, on examination, it appeared bad enough, for, in addition to an unhealthy looking fistulous sore, the tissues in the vicinity were in a callous condition, and very much thickened, evidently the result of the accident that divided the duct, and the inflammation subsequently set up by the use of caustics or the actual cautery.

The wound is situated immediately upon the external margin of the inferior maxilla, just where the duct turns to ascend the cheek, and is about the size of a half-crown. Its edges are very much elevated, and on a level with the tumefied textures which encircle it. Its centre is depressed, and exhibits an opening sufficiently large to admit a goose-quill. The damage has, judging from appearances, been done by the head-collar, as the opposite jaw bears the mark of a contused wound. When food is given, the saliva flows in a pretty considerable stream from the opening, even after the motion of the jaws has ceased; and sometimes when no food is given, though then not in such quantity.

Thinking it a pity to see such a good animal thrown away, from such a seemingly trivial cause; and as we did not then require her services, I thought the chance a good one for making a trial of collodion, and if that failed, then I could destroy the function of the gland and render the mare, for our work, serviceable.

Having procured some good collodion, I was obliged to throw the mare down before I could have the diseased surface properly prepared, and the dressings applied in the manner recommended by Mr. Gowing. His mode of after-treatment was also closely followed up, and every precaution taken in order to ensure success.

I may add, that over the whole dressing was applied strips of brown paper steeped in glue, and on them a layer of tow. Over all I had a three-tailed bandage placed, one tail going over the head behind the ears, another across the brow, and

the third around the face. All went on, so far as we could judge, very well, until the morning of the second day, when it was found that the saliva escaped in considerable quantity from the inferior part of the dressing, so that all chance of a good result was hopeless for that trial. Again, on the same day, I applied a greater quantity of the collodion than on the former occasion, and on the following day I found it had failed in the same way.

I again had the mare cast, and on examining the fistula, the idea suggested itself, might not the portion of duct leading from the wound to the mouth be closed or altogether obliterated by the adhesive inflammation set up in the parts after the injury had been inflicted? and after a most diligent probing and manipulation, I could find nothing of it, although the other part leading to the gland could be explored with facility. Might not this be the cause of the collodion's non-success? and might an artificial opening made from the fistula upwards into the mouth not prove of service, and enable me to close the external opening?

All the morbid matter was now carefully dissected away from around the wound to the depth of half an inch; and the thickened parietes of the fistula, somewhat resembling cartilage, were next scooped out, until an opening was made nearly large enough to admit the end of the little finger. During this time the bleeding was rather profuse. Nextly, a bullet-probe—the probe end fixed in a handle, and the eye end slightly curved and sharpened, and armed with a long piece of silk ribbon—was passed from the bottom of the fistula up in the supposed course of the canal until it reached nearly the middle of the superior molars.

This was the most difficult task of all, and required some time for its performance. Then the mouth being kept open to its utmost by the balling-iron, the needle was pushed gently into the mouth through the cheek, until the end of the ribbon could be seized upon, and then it was withdrawn.

The seton was smeared with digestive ointment, and the end in the mouth left hanging there. The external parts had cold water dressings, and were finally bandaged up. The mare was only allowed sloppy bran-mashes, all hay and straw being removed from her loose box. In this way she was kept for four days, when a sufficiently large opening appearing to exist in the tract of the seton, I had the latter removed, the granulations around the fistula scarified, and immediately covered over with nitrate of silver, which soon formed a coagulum over the whole. Pledgets of dry tow, so arranged as to make equable pressure over the wound and

between the branches of the lower jaw were next applied, and over this the three-tailed bandage placed. The whole side of the face was much swollen and painful, and the mare refused to eat any food for nearly two days, during which time she had frequent enemias of flour-gruel given her.

Every day the dressings were removed and the nitrate of silver applied, and although saliva still continued to flow, yet the wound was healing rapidly, and the stream becoming more and more attenuated.

At length, on the 24th of May, all oozing had ceased, and the mare, in addition to her bran-mashes, had a small quantity of damped hay mixed with tares allowed her. This she masticated with avidity, and shortly after her commencing to eat, a small distension could be perceived where the fistula once was. Since then this has also gradually disappeared, and now, with the exception of the cicatrices and a degree of induration, there only remains a thin eschar.

In the treatment of this case, the benefits to be derived from the use of the nitrate of silver as a stimulant and coagulating agent cannot be too highly extolled, as by its intimately uniting with the albuminous matter of the blood and tissues, and with the chlorides and other salts of the saliva, a covering was formed for the fistula, underneath which the granulations sprung rapidly up, until, towards the end of the cure, only a little saliva forced its way through the minute opening not yet entirely closed, and then another slight touch of the caustic on the liquid caused an immediate white precipitate, rapidly becoming darkened in colour, and forming a fresh plug.

I shall never after this think of curing a fistulous stenorion duct by destroying the secreting property of the gland. And as for employing the actual cautery, it appears to me to do more harm than good, as in a very short time sloughing takes place—long before the granulations underneath have had time to effect any good—and then an opening is left larger than before, while a degree of inflammation is set up which may afterwards prevent an easy cure by obliterating the canal of the duct from the lesion into the mouth.

“BERRY *v.* BRISCOE.”

To the Editors of the ‘Veterinarian.’

DEAR SIRS,—The report in your May number of the dog case, “Berry *v.* Briscoe,” is very important and suggestive, and one which the members of the veterinary profession will do well maturely to reflect upon.

Giving all parties interested the usual quantity of latitude, we arrive at the fact, that the dog is sent to the defendant and placed under his care for professional treatment, the animal having received an injury, either serious or slight; it is not important which.

Under his care the dog remains from two to three weeks, and is cured; the while being boarded and lodged in a box fit for the winner of either the Liverpool or Waterloo Cup.

The defendant for this demands two guineas, which the plaintiff refuses to pay, and the defendant detains the dog. They become irritated, and hence the action for 10*l.* 10*s.* the alleged value of the animal.

The death has nothing whatever to do with the matter in dispute, since legal proceedings are instituted *before* the dog dies, or is even supposed to be ill.

A post-mortem inspection is made by the *defendant*, in the presence of other veterinary surgeons, amongst whom is Mr. Hayes in behalf of the plaintiff. It is clearly shown, and freely admitted by all present, that the animal died of a diseased heart of long standing, and which was not in any way accelerated by any circumstances over which the defendant had any control. The plaintiff would not have taken any money for the animal, but he should think it would be worth 10*l.* 10*s.* *for a dog which his own veterinary surgeon on oath states died of diseased heart*; and he was of necessity so diseased, *when he is sent to defendant for treatment of an injured leg*. He also thinks a guinea a sufficient remuneration for defendant, who, it should be known, is the oldest graduated veterinary surgeon in Liverpool, and whose diploma is dated somewhere about the year 1819. Mr. Hayes, the *youngest* graduated practitioner in Liverpool, whose diploma is dated 1856, also thinks one guinea for a fortnight’s attendance and keep a sufficient remuneration, although he did not consider himself over paid with half a guinea for looking on at a post-mortem inspection. Should he, some forty years hence, be blessed, like the defendant, with health and in-

telle to enable him to continue to follow the profession, I doubt much if he will *then* consider himself well paid with a guinea; a sum for which much porter's work may be had, but very little professional attendance can be obtained.

A third or fourth rate attorney would ask as much for pleading in such a case in a petty court for half an hour, as the defendant demanded for a fortnight's attendance and keep of this dog.

Why should this difference exist? The educated veterinary surgeon is a gentleman by profession, and ranks as such in her Majesty's service; if the *individual* members are not so, the fault rests not with the profession, but with themselves, and it behoves the members to look to this seriously ere it is too late.

It is evident that the defendant did wrong by detaining the dog. He brought thereby the action on, and a verdict against himself.

As it regards the value of the dog, the evidence of the dealers was truthful and convincing. Every day's experience goes to confirm it; for where there was one dog of the class three and a half years ago, when this dear pup cost 27s., there are now one hundred, and they can be had at any street corner for from 10s. to 50s. according to their style and capabilities. But it is alleged that this particular animal was not a rabbit-runner; and I believe it, for no one ever knew any animal with a diseased heart that could run at all.

I am, dear sirs,

Yours very truly,

ONE WHO WAS PRESENT AT THE TRIAL.

Facts and Observations.

"DIG-A-MOLL."

THE above is a name given by the natives of India to a gum-resin, the produce of a plant indigenous to Umballah, some of which has been kindly sent to us by Mr. S. W. Jeffery, M.R.C.V.S., V.S., 4th Bengal Cavalry.

In an accompanying note he says, "Of it I make a tincture or an ointment, according to the usual formulæ; the advantage resulting from the use of which is that the flies will not touch the wound to which it is applied—a desideratum in

this country. I also form a liniment with it for Bursauttee ulcers, as follows, although there is little hope of curing this disease during the rainy season: Simmer six ounces of the gum-resin in a quart of linseed oil for some time, and when cold, add two ounces of the oil of turpentine. This I find an excellent digestive for all ordinary purposes."

[The specimen received exists in small irregularly-shaped masses, which in the centre are semi-opaque, and their outer surface is translucent; the powder is greenish-yellow; the smell and taste peculiarly offensive and abiding, resembling the foetid gums. It is apparently commixed with accidental impurities, is inflammable, and partially soluble in rectified spirit, to which it imparts both its colour and odour.]

IODIDE OF AMMONIUM.

MR. PERCIVAL SMALE, V.S., Leamington, adverting to our notice of the above compound, informs us that he has been in the habit of employing for some time past, and with marked advantage, the following liniment in cases of incipient exostoses:

℞ Iodinii, ʒi;
Potass. Iodid., ʒij;
Liquor. Ammon., fʒiv;
Glycerini, fʒiv. Misce.

He also says that in cases of suspected ulceration of the synovial membrane of the hock-joint he has resorted to it with success, adding a drachm of the extract of belladonna to every ounce of the liniment, and enjoining perfect rest to the animal.

SUPERSTITION.

THE incident referred to by Mr. Stockley, in his retiring speech, as president of the Royal College of Veterinary Surgeons, recorded in our last number, of one of the older veterinary surgeons, dressing the nail which had been the cause of an injury, instead of the wound in the foot itself, has been much commented upon, and its truth doubted from its absurdity. It has, however, its antecedents in very

early times, when much superstition existed in connexion with medicine.

Dr. Paris, in his 'Pharmacologia,' adverting to this subject, says, "It is, however, necessary to state that many of the practices which superstition has at different times suggested, although in themselves extremely absurd, have by accident possessed natural powers of considerable efficacy, or have led to results and discoveries of great practical importance. The most remarkable instance of this kind upon record is, that of the *sympathetic powder* of Sir Kenelm Digby, Knight of Montpelier. Whenever any wound had been inflicted, this powder was applied to the weapon that had inflicted it, which was, moreover, covered with ointment, and dressed two or three times a day. The wound itself, in the mean time, was directed to be brought together, and carefully bound up with clean linen rags, but, ABOVE ALL, TO BE LET ALONE for seven days; at the end of which period the bandages were removed, when the wound was generally found perfectly united. The triumph of the cure was decreed to the mysterious agency of the *sympathetic powder* which had been so cunningly applied to the weapon, whereas it is hardly necessary to observe, that the promptness of the cure depended upon the total exclusion of air from the wound, and upon the sanative operations of Nature, not having received any disturbance from the officious interference of art. The result, beyond all doubt, furnished the first hint which led surgeons to the improved practice of healing wounds by what is technically called the '*first intention*.'

"The rust of the spear of Telephus, mentioned in Homer as a cure for the wounds which that weapon inflicted was probably *verdigris*, and led to the discovery of its use as a surgical application.

"Soon after the introduction of gunpowder, *cold water* was very generally employed throughout Italy, as a dressing to gunshot wounds; not, however, from any theory connected with the influence of diminished temperature or moisture, but from a supposed supernatural agency imparted to it by certain mysterious and magical ceremonies, which were daily performed immediately previous to its application. The continuance of the practice, however, threw some light upon the surgical treatment of these wounds, and led to a more rational management of them."

The like superstitious practice is repeatedly alluded to by poets. Thus Dryden has introduced it in his *Enchanted Island*, Act v, sc. 2.

“*Ariel*. Anoint the sword which pierced him
With this weapon salve, and wrap it close from air
Till I have time to visit it again.”

Again, in sc. 4, *Miranda* enters with *Hippolito*’s sword wrapt up.

“*Hip*. O my wounds pain me. *She unwraps the sword.*

Mir. I am come to cure you.

Hip. Alas ! I feel the cold air come to me ;
My wound shoots worse than ever.

Mir. Does it still grieve you ?

[*She wipes and anoints the sword.*

Hip. Now, methinks, there’s something laid upon it.

Mir. Do you find no ease ?

Hip. Yes, yes—upon the sudden all this pain
Is leaving me—sweet heaven ! how am I eased ?”

Then again, Sir Walter Scott, in *The Lay of the Last Minstrel* :—

“ But she has ta’en the broken lance,
And wash’d it from the clotted gore,
And salved the splinter o’er and o’er.
William of Deloraine, in trance,
When’er she turn’d it round and round,
Twisted, as if she gall’d his wound ;
Then to her maidens she did say,
That he should be whole man and sound.”

Canto iii, st. xxii.

POISONOUS ACTION OF ACONITE.

ACONITE appears to have been known to the ancients as a virulent poison, and was resorted to by some of them for secret poisoning on account of the quickness and certainty of its action.

Alexander the Great was poisoned at Babylon by his cup-bearer. The historians tell us that the poison was “so strong that it could not be contained in brass, nor iron, nor shell, but only in a horse’s hoof.” The same properties are attributed to the waters of the Styx, and as Stygium was an epithet sometimes applied to aconite, it is supposed that it was with this agent Alexander was poisoned.—*Dr. Pickells.*

POISONOUS EFFECTS OF HEMLOCK ON PIGS.

DR. PRICKELLS, of Cork, writing on vegetable poisons, in the 'Sanitary Review' for March last, says, "Wæpfer, in his treatise on the *cicuta virosa* (water cow-bane) states that it is poisonous to swine. Mr. Murphy, Professor of Agriculture to Queen's College, in that city, has informed me that the proprietor of a farm on the river side some time since lost a number of pigs in consequence of their having eaten of the *Ænanthe crocata* (hemlock-dropwort) which had been cast ashore in considerable quantities after a flood. The poisonous effects of these species of hemlock on swine are the more remarkable, as in America, swine, it is said, eat the rattlesnakes with impunity, farmers keeping pigs on their lands for the purpose of clearing them of these reptiles."

EDIBLE SEA-WEEDS.

It has been proposed that many of the, so-designated, worthless sea-weeds that grow in such rich luxuriance on our coasts, should be used as food; and Dr. John Davy is engaged, in conjunction with Dr. Apjohn, in investigating their properties. The latter has demonstrated the existence of a large per centage of nitrogen in some of them, far greater than many edible substances contain, such as potatoes, beetroot, mangolds and turnips; thus proving their nutritive properties, and justifying their use as food. He says "the proportion of nitrogen contained in these Algæ exceeds not only that of the ordinary articles of vegetable food, but even that of wheaten flour, being as 2.407 to 1.817."

Prizes are offered for Essays showing the capability of their being also resorted to as food for animals as well, such as cattle, sheep, &c.

Extracts from British and Foreign Journals.

ENDEMIC DISEASE IN AMERICA, FROM DISEASED MILK AND MEAT.

SIR,—In the editorial article upon “The Relations of Food and Disease,” you ask, “Can fifty, nay twenty, well-marked instances be adduced, indicating that any disease has originated in the child, the man, or the woman, from the use of diseased milk?” And again, “Can fifty, nay twenty, carefully observed instances be enumerated in which, from the eating of diseased flesh, well-marked signs of any special and communicable disease has originated?”

Permit me to state, in reply to these questions, that there is an endemic disease frequently observed in many parts of the United States, especially, I believe, in the states of Alabama, Kentucky, Indiana, and Ohio, which affects both man and cattle; but the former only from eating the milk and its products, and the flesh of the latter.

The symptoms in both are alike, and correspond in degree of severity, and are such as are produced by the narcotico-acrid class of poisons.

The disease is attributed, in cattle, to something eaten or drunk by them, the nature of which has never been satisfactorily ascertained, though most diligent inquiry has frequently been made. Some suppose it to be owing to a poisonous herb, growing in certain low, marshy localities, which the cattle take as food; others suppose it to be a poisonous vine, growing in the same localities. The theory of miasma has its ardent supporters, while others, again, think that the drinking of stagnant or otherwise poisonous water is the cause. But all that is known with certainty is, that cattle feeding in certain low marshy localities are attacked with symptoms, such as are produced by the class of poisons referred to—vomiting, purging, extreme nervous agitation, &c.; and this last very marked symptom has given the popular name of “trembles” to the disease in cattle.

I believe it is only met with in cattle during the summer and autumn, and is more common and virulent some years than others, especially after an unusually hot and dry season.

Now, as to the effects upon man from eating the milk or its products, and the flesh of animals labouring under the

disease. The symptoms are precisely those observed in the cattle, viz., vomiting, purging, extreme nervous agitation and prostration. Collapse and death invariably follow the ingestion of the diseased animal products, the degree of violence of the symptoms being proportioned to the amount of the poisonous principle operating in the animal at the time when the milk was drawn, or the flesh dressed for food, though no symptoms of disease had yet been manifested, and no evidence whatever existed that the poison was in operation in the animal.

Again, the animal may be so mildly attacked as to be scarcely, or not at all, noticeable when unsuspected, and to recover without betraying the disease; at the same time that the milk, butter, and cheese, spread far and wide by the avenues of trade, will sicken all who are so unfortunate as to make use of them, which has the effect to make consumers in the vicinity of such localities careful to inquire where such products came from, and by whom they were made.

But ordinarily the producer and his family are the first sufferers, and that determines the destruction of the contents of the dairy, and stops the spread of this dreadful and mysterious affection, which in man is variously named—the milk-sickness, sick-stomach, swamp-sickness, puking fever, &c.

If the cow has a calf, it contracts the disease of its mother through the medium of the milk, and its veal causes the same results when eaten as the flesh of the mother-cow.

I should be glad to give more particulars of this obscure and much-dreaded disease; but I am unable to do so, not having been in the districts where it is endemic for a number of years, not since I have made medicine a study, and I have never given the subject special attention; but, thinking it had a direct bearing upon the subject in question, and might be of interest in that connection, I have concluded to send you this hastily prepared and imperfect account of milk-sickness.

Yours, &c.,

J. BART. MINTURN, M.D.

PARIS; *April 11, 1857.*

(*Medical Times and Gazette.*)

ACTION OF THE IODIDE OF POTASSIUM.

DR. SIEVEKING, in a paper read by him before the Harveian Society, says, “that of the remedies we owe to the advancement of modern chemistry, none had obtained a higher place in the estimation of medical men than the iodide

of potassium. There might be some difference of opinion as to its efficacy in this or that class of disease, or in individual cases; but its general utility as a member of the pharmacopœia was undeniable. Rarely producing any unpleasant effects, and unless administered with culpable carelessness, never giving rise to disturbances in the system of a dangerous and permanently injurious character, it might be classed among the safest and most beneficial remedies we possess. Dr. Sieveking observed that the unpleasant symptoms produced at times by the remedy were easily avoided or corrected, either by altering the doses, or by persevering in the use of the agents, and then briefly reviewed the general therapeutic effects of iodide of potassium. He observed that according to the disease in which it was administered, or according to the theory in vogue, it might be called an alterative, an eliminant, or a tonic. Dr. Sieveking, guarding himself against the imputation of attempting to exhaust the subject in a single paper, stated that he wished to bring certain cases and statements before the Society, to show the threefold action of the remedy. 1st. As an evacuant of excessive morbid secretions. 2d. As an antidote to organic poisons. 3d. As an antidote to and eliminant of inorganic poisons. With regard to the first class, the author stated, that although the iodide might be shown to act mainly as a diuretic, it could not be placed in the same category as those agents which operate solely by promoting copious secretions, as the amount of fluid discharged in consequence of its exhibition did not always bear a definite ratio to the intensity of the disease and the quantity of morbid accumulation in one of the cavities while acting as an eliminant; it also appeared to correct the morbid condition of the blood and the vascular system which primarily induced the disease. In illustration of the more exclusively eliminant action of the iodide, Dr. Sieveking brought forward a case of hydrothorax of an aggravated character, in which the speedy cure appeared exclusively due to the salt in question. The author also referred to the eliminative power which iodide of potassium appeared to exert in hæmorrhagic effusion of the brain. Under the second head Dr. Sieveking spoke of the action of iodide of potassium in counterbalancing and removing the organic poisons, which appeared to constitute the *materia morbi* in numerous diseases. He adverted to syphilis in its different forms, to various scaly and other forms of skin disease; and brought forward cases in illustration, cases which, however, he admitted to be incomplete as proofs, on account of the iodide not having been the sole remedy ad-

ministered; he urged that the conviction which a multitude of small experiences wrought in the mind of a practitioner could with difficulty be illustrated by solitary instances of so complicated a character as many of the diseases which might be classed under the second head. In the third head the author explained his views with regard to the action of iodide of potassium in the case of the various affections resulting from metallic poisoning. Cases of lead-poisoning were brought forward, and a well-marked case of mercurial poisoning was also quoted, in illustration of the value of the iodide in such cases. Dr. Sieveking adverted to the importance of a correct diagnosis in cases of lead-poisoning; as symptoms, which otherwise might induce a most unfavorable prognosis, would, when regarded as the result of saturnine intoxication, justify a much more favorable view. The difficulties attending the detection of lead in the urine, where it was manifestly being eliminated from the system, were adverted to, and it was suggested that probably at times some, if not all, the lead was evacuated by the intestinal canal. Dr. Sieveking concluded by observing, that he had by no means alluded to all the various forms of disease which called for the exhibition of iodide of potassium, but that he had merely desired to submit to the consideration of the Society some of the opinions which practical experience had induced him to form relative to the drug, and to elicit from the stores of observation of the members further illustrations in regard to its uses and effects."—*Medical Times and Gazette*.

CHOLERA AMONGST CATTLE.

SIR,—I beg to call your attention, and that of the authorities, through your journal, to a virulent attack of cholera amongst pigs and cattle in my neighbourhood. Having heard that a number of pigs belonging to a gentleman here had died, and that the cause of death was unknown, I went and saw one which had been taken ill a short time previous. It was lying on its side in a state of collapse, eyes dull, ears hanging back, vagina hanging out, pale and flabby. On being disturbed, it uttered a peculiar, low, wailing cry. The belly was of a beautiful pink colour, shaded with blue; on some parts of the body the blue colour approached to a black. On turning it over, the side which was lying on the ground was of its natural colour (white), showing, I think, that exposure to the air had something to do with the change of colour. At intervals it was much cramped, and the soft

fæces were jerked to a little distance. It had also vomited, and its mouth was filled with a grumous fluid. Various remedies were tried, which gave it increased strength, but with return of strength came increased violence of cramps, and it died after six hours' illness. I opened it next day. The post-mortem appearances were—flaccidity of body; surface a dark blue, with a pinkish tint on belly; stomach moderately distended with half-digested food, studded with patches of inflammation varying in size from a shilling to a half-crown, the intervals being natural in colour: the small intestines, at intervals of about eight to twelve inches, were inflamed, the length of inflamed part about an inch; large intestines healthy; liver and spleen natural; heart natural. The lungs alone presented features which arrested the eye—namely, from the intense scarlet colour of their surface and of every part cut into; they were not congested, but could be expanded fully with the blowpipe, collapsing when untied. Eight have died since that (the 3d inst.) The keeper informed me that they had lost about forty since the disease appeared. At first it began like influenza or intestinal fever; fever, prostration, constipation, loss of power in the legs, and they lingered a long time; now the disease is different, and they die after a few hours' illness. The long ranges of buildings are badly ventilated and not drained. I felt suffocated while walking through them, and there was a depth of six inches of putrid water under the plank on which I walked.

On Saturday last, I visited another farm where three cattle had died,—one clearly from lung-disease, and two from choleroïd disease, from the cramps and few hours' illness.

I shall make no comments further than to say, that a great and heavy responsibility lies on our authorities, inasmuch as no provision has been made to supply the farmer with efficient skill for investigating the nature, treatment, and prevention of those diseases; and further, that when an animal dies after such a short illness, to the ordinary eye there is no change to be seen in the meat when cut up. I know to a certainty that diseased carcasses daily find their way to the towns, and are there consumed by the unsuspecting public. In short, nothing but skill of a high order, with auxiliaries not at present in use, can detect such meat.

I remain, Sir, your obedient servant,

WILLIAM M'DONALD, M.R.C.S.,
Surgeon to the Heathfield, Bedlay, and Shankramuir Works,
and Medical Officer for Cadder parish.

CHRYSTON; June, 1857.

(*The Lancet.*)

ON PHOSPHORUS AS A POISON.

By C. W. BINGLEY, M.D.,

Lecturer on Chemistry to the Sheffield School of Medicine.

DR. BINGLEY having recorded a case of a man, aged 50, an habitual drunkard, who had taken phosphorus for the purpose of committing suicide, which soon proved effectual in destroying life, as he was seen in his usual state of health about twelve o'clock on the night previous, and early on the following morning his dead body was discovered in a field about two miles and a half distant, proceeds to observe—

“Being anxious to ascertain the exact physiological effects of this substance, I made some experiments on animals some months ago, in concert with Dr. Harley, of University College, London. We first gave to a frog two pills, containing one grain each of Roth and Ringeisen’s phosphor paste. The animal appeared to suffer no inconvenience from the dose during twelve hours, when it voided by stool both pills, apparently unchanged. It was found dead, and in a state of rigor mortis, thirty-six hours after the pills had been administered. The post-mortem examination revealed no abnormal appearance.

“To another full-grown frog, Dr. Harley and myself gave two fluid drachms of a saturated solution of phosphorus in oil; the frog was put into a large glass jar, which soon became filled with the fumes of phosphorus emitted from the mouth and nostrils of the animal. The frog died in the course of twelve hours after taking the solution. On opening the body, no sign existed to indicate death by poison.

“To a kitten about three months old, Dr. Harley and myself gave five grains of the phosphor paste, repeating the dose twenty-four hours afterwards. No symptoms of poisoning having manifested themselves within ninety-six hours after the first administration of the poison, the animal was made to swallow other twenty grains of the paste; in an hour afterwards it was seized with frequent fits of vomiting, followed by twitchings and violent convulsions, evidencing extreme suffering, until death ensued in rather less than an hour after the vomiting commenced.

“On a post-mortem examination, the pulmonary vessels were found full of venous blood. The right side of the heart was engorged with blood; the left side empty; a tea-spoonful of serum in the pericardium. Gall-bladder quite empty and shrivelled up. Hepatic veins engorged.

Spleen not enlarged, but unusually dark in colour. Abdominal cavity contained about two or three tea-spoonfuls of serum. Lower part of œsophagus covered with a thick layer of mucus. The intestines felt hard, like a cord, under the finger. On opening the stomach, which was half contracted, there was an escape of white fumes having the odour of garlic. The stomach contained nothing more than about two tea-spoonfuls of mucus; it was lined with a thick layer of tenacious yellow mucus, about one eighth of an inch thick. No ulceration of the mucous membrane existed, but some congestion at the middle and pyloric end of the stomach. Throughout the whole extent of the small intestines there was a very thick layer of yellow mucus; no contents. The rectum alone contained fæcal matter, which was of a greenish colour, not blue like the poison that had been administered. The vessels of the brain and spinal cord were slightly congested; the nervous centres were otherwise quite healthy.

“On a subsequent occasion I gave forty-five grains of phosphor paste to a full-grown fowl, together with two grains of solid phosphorus. Twenty-four hours afterwards it seemed well, and ate its food as if not in the least affected by the poison, but six hours later I found it quite dead, though warm; the muscles of the back, breast, and legs were quite rigid.

“On post-mortem examination no marks of internal inflammation were found. The crop was full of food, and lined with a thick, brownish-yellow, viscid mucus, and had a strong odour of garlic. On opening the folds of the gizzard, white fumes escaped in considerable quantity. The small intestines appeared contracted, and lined with a thick coat of mucus similar to that in the crop, and which, in fact, formed the whole of their contents; but the large intestines were, as in the case of the cat, full of hard, green, feculent matter. In order to discover if much of the poison remained in the tissues of the fowl, I fed two full-grown cats with the heart, lungs, liver, and gizzard, during two days. At first they appeared to suffer no inconvenience from the food, but after remaining apparently quite well during eight days, one of the cats manifested symptoms of acute pain, which were rapidly followed by convulsions. The convulsions continued more or less strong until it died, four hours and a half after the first symptoms of poisoning presented themselves. The other cat, which had escaped from its place of confinement, was next day found dead in a state of extreme rigor mortis. On a post-mortem examination being made, both animals were found to present very similar appearances.

The right side of their heart was flaccid and empty, the left side firmly contracted. The lungs and most of the abdominal organs were found somewhat congested. The mucous membranes of the stomach were highly vascular, and in both cases the organ contained a quantity of mucus and half-digested food. It is worthy of remark that the gall-bladders were quite empty, just as was found in the case of the kitten experimented upon by Dr. Harley and myself. The membranes of the brain and spinal cord in all three cases presented the same slightly congested appearance. On analysing the contents of the stomachs, I detected only a trace of phosphoric acid, while in the brain, liver, heart, lungs, and muscles, I found it in a more appreciable quantity.

“In order to ascertain the effects of phosphorus as a poison, when administered in large doses, I gave a full-grown healthy cat, at half-past four p.m., sixty grains of phosphor paste. Next morning it was found dead, and in a state of rigor mortis. On examining the body, the same appearances were present as in the previously cited examples, and phosphoric acid was found in the blood as well as in the heart, liver, lungs, and muscles.

“From the results of these experiments, I conclude that phosphorus may act, in the first instance, as an irritant poison in exciting inflammation of the mucous membrane of the stomach, not being so active an irritant, however, as either arsenic or corrosive sublimate; but from the symptoms immediately preceding death, I incline to the opinion that this poison bears considerable analogy to strychnine in the manner in which it acts upon the animal frame—not by a direct action upon the nervous system, as was formerly supposed, but by preventing the assimilation of oxygen by the constituents of the blood. From the analyses of the blood, flesh, brain, heart, liver, and lungs of the animals poisoned by phosphorus, we saw that phosphoric acid was present in abnormal quantity. It therefore appears that the phosphorus enters into combination with oxygen in the stomach, to form phosphoric acid, and it is doubtless as such absorbed into the blood. The inflammatory action in the mucous membrane of the stomach would most probably take place during the slow transformation of the phosphorus into phosphoric acid in that organ. Dr. Harley has shown, by direct experiment, that strychnine and some other poisons possess the property of so modifying the organic constituents of the blood as to render them incapable of absorbing oxygen, and exhaling carbonic acid, and thus becoming fitted for the purpose of

nutrition; and pointed out how they may in this manner produce convulsions, and ultimately destroy life. I imagine that phosphorus, like many other poisons, acts upon the blood in the manner ascribed by Dr. Harley to strychnine, and thus in a similar way destroys the life of the animal.”—*The Lancet*.

THE LONDON COW-KEEPERS.

THE days of the monstrous abuse which has so long infested London in the shape of filthy, nay, pestilential cow-sheds, are at last numbered. The evil had grown to such a magnitude as to call for an active interference. The simple fact that treble premium is charged for insuring the cows in London dairies, may give an idea of the estimate formed by insurance companies—excellent authority—as to the greater risk of disease incurred by the bad management of the metropolitan dairymen.

It is a notorious fact that the most beautiful milch cows are bought up for the metropolis, but the abodes of putridity to which they are doomed give rise to disease in nearly 70 per cent. per annum, and in half the cases death is inevitable. Be it noted, moreover, that though a cow be extensively diseased, its milk finds its way into the bright itinerant milk-cans, the purveyors of our kitchen and breakfast tables; and when at last the wretched carcase is unable to stand, a covered van conveys it to a slaughter-house—the half-way house to sausage-makers and cook-shops.

The Association of Medical Officers of Health have taken the matter in hand, with a determination to put an end to a state of things alike offensive to humanity and the commonest principles of sanitary science. The cow-keepers of London have just formed themselves into an association, the practical effect of which will, we trust, be to accelerate the application of the remedy in the most practical manner. No fencing with the real question at issue can be tolerated; the evil is a disgrace to this metropolis, and the sooner the cow-keepers set about correcting it in earnest, by draining and ventilating their premises, the greater reason will they have to claim official consideration for their interests and good intentions. We have reason to know, on good authority, that the introduction of a Bill into the House of Commons to prohibit the keeping of milk cows in London is contemplated by one of the most influential members, and there can be no doubt it

will receive the support of Government, and therefore become law, unless metropolitan dairymen can prove by facts that they have firmly resolved to sweep the seeds of pestilence from their establishments. We are anxious to see the progress of improvement with the least possible injury to trade, consistent with the higher interests of public health and social economy; and we invite our correspondents to communicate to us facts on either side of the question, which can tend to facilitate its solution in the most speedy, most efficient, and least unpleasant manner.—*The Field*.

THE URARI, OR ARROW POISON OF THE INDIANS OF GUIANA.

By Sir ROBERT H. SCHOMBURGK, Ph.D.

I published after my return from Guiana, in the 'Annals of Natural History,' some remarks on the urari poison of the Indians of that territory, principally as prepared by the Macusis, who occupy the open country between the rivers of white waters, namely, the Rupununi, Takutu, and Parima, or Rio Branco. The latitude 2° and 3° north, and the longitudes 59° and 61° west from Greenwich, circumscribe the country over which their settlements are dispersed, comprising about 21,000 square miles.

My former observations, and the experiments which I had made with this poison, were reawakened by the perusal of some remarks in the 'Journal de Pharmacie et de Chimie,' which induce me to state again my opinion on the true nature of this terrible substance.

As many of the readers of the Transactions of the Pharmaceutical Society may not be acquainted with the preparation, nature, and effect of the urari, I trust it may not be considered a useless repetition to give a general outline of what I have previously stated in this regard in the 'Annals of Natural History.' The active principle of this, the most dangerous of all poisons, seems still enveloped in obscurity. It has been so for centuries past. Although the first discoverers of the New World made it already known that the aborigines employed different substances to poison their arrows, the action of that poison seems to have been very different from that of the urari. Oviedo, the contemporary of Columbus, who passed many years in the New World, and

had at various times occasion to see the effect of the poison, says, that the people who had been wounded became ravingly mad, biting themselves in the paroxysm of pain until death ended their sufferings. Herrera confirms this account, and asserts that the ingredients of the poison consist of a root which is found on the sea-shore, and has a very bad smell, of black stinging ants as large as beetles, spiders, nasty hairy caterpillars of the size of half a finger, which sting as badly as the ants, bats' wings, the neck and head of a poisonous sea-fish called tabrino, toads, and necks of snakes, which ingredients were boiled with the fruits of the manzanilla by a male or female slave outside of the village; for the fumes which arose from these poisonous materials were so injurious, that the person who had to prepare the poison fell always a victim and died. This historian attests already, that in order to be effective, it must come in contact with the blood; if this be the case, and let the wound be as small as that inflicted by a pin, the wounded person pays for it with his life. The remedy then known was to apply fire to the wound, and to keep a strict diet and be abstemious. Others pretended, in harmony with the superstitions of those times, that the fæces of the person who had been wounded should be taken inwardly in pills or otherwise.

Here we have, then, in all its prominent features, the account surrounded by superstition of the component parts and the preparation of the arrow poison, which, repeated by the fathers Gumilta and Gili, has become the text-book from whence many who have since written on the arrow poison have taken their account of the preparation.

Sir Walter Raleigh, in his 'Discovery of the Empire of Guiana,' observes: "There was nothing whereof I was more curious than to finde out the true remedies of these poisoned arrowes, for besides the mortalitie of the wound they make, the partie shot indureth the most insufferable torment in the world, and abideth a most vglie and lamentable death, sometimes dying starke mad, &c. * * * Some of the Spaniards have been cured in ordinary wounds of the common poisoned arrowes with the juice of garlike, but this is a general rule for all men that shall hereafter travell the Indies, where poisoned arrowes are used, that they must abstaine from drinke, for if they take any licor into their body, as they shall be maruellously provoked thereunto by drought, I say if they drink before the wound be dressed or soone vpon it, there is no way with them but present death."

The interest respecting this celebrated poison, and the nature of its ingredients, was kept alive. Every traveller returning from Guiana, from the Amazon, and the Brazil,

brought new accounts of its preparation and effects; the relation still surrounded with marvels, amongst which the admixture of snakes' teeth played a great figure. At the commencement of the nineteenth century, the Nestor of scientific travellers, Baron Alexander von Humboldt, gave an authentic account of its preparation, attesting that neither snakes' teeth nor stinging ants formed any of its component parts, and that the active principle was derived from a plant, which he considered to belong to the *Strychnææ*. Von Martius, the great Brazilian traveller, attests that the chief ingredient of the arrow poison of the Indians of the Yupura, is the bark of a slender tree, which in the Tupi tongue is called Urari-riva, the *Rouhamon Guianensis* of Aublet, much allied to a plant which Mr. Bentham, in the enumeration of my Guiana plants, has called *Strychnos cogens*, which is still employed by some of the Indian tribes for the preparation of their arrow poison. Dr. Peeppig, in his 'Reise in Chili, Peru, und auf dem Amazonenstrom,' observes with respect to the arrow poison of Peru: "The supposition occasionally met with in Peru, that animal poisons were mixed in the composition, has not met any confirmation." The preparation of the urari, as practised by the Juris, Passes, Miranhas, and Ticunas, Indian tribes of the rivers Amazon and Yupurara, was witnessed by Von Martius, who asserts that no animal substance was added to it.

Not contented with the report of the simple method of its preparation, Mr. Charles Waterton, the author of 'Wanderings in South America' (a book delightful to read, vivid and animated in the descriptions of the glorious scenes which nature presents in Guiana, but devoid of scientific researches), introduced again the account given by Herrera, Gumilla, &c., reinstating snakes' teeth, stinging ants, &c. But Mr. Waterton had never been present when the poison was prepared, nor had he seen the plant in its native growth which furnishes the active principle. He reports merely what had been communicated to him in this regard by some of the crafty Indians, whose interest it was to surround the whole with mystery.

The name by which Mr. Waterton introduces this famous poison is even spurious. The Macusi Indians, the most famed tribe for the preparation of the true poison, call the plant which furnishes it Urari-ye, and the poison itself urari, which the Carabisis or Caribs, who are not able to make a proper distinction between the sound of *r* and *l*, have corrupted into Ulari and Urali, of which Mr. Waterton has made Wourali. Raleigh had heard, during his voyage, that the Indians call a vegetable substance, with which they

poison their arrows, "Ourari," and under that name it occurs again in the list of "names and rivers" as a poisonous herb. Herrera mentions the word Urari, and it exists to this day in the name of the rivers Urari-Capara and Urari-Cuera, which at their confluence form the Rio Branco. Von Martius and Von Spix, in their 'Travels in Brazil,' observe that during their exploring tours up the Amazon, Yupura, Rio Negro, &c., they heard the poison pronounced as Urari, but never Wourali. It is surprising, therefore, why a spurious name should have been substituted in England for the true one, which Raleigh already reported in 1595 to be Ourari.

I had made myself acquainted with these facts before I commenced my exploring expeditions in the interior of Guiana, and it may be conceived that I was most anxious to become acquainted with the ingredients which formed the famous urari poison, and the plants which furnished its component parts. I was fortunate enough to accomplish my wish during the first expedition, which, under the direction of the Royal Geographical Society of London, and under the patronage of the British Government, I undertook, in 1835, to explore the interior of Guiana. The plant which Humboldt was prevented from seeing, and which was one of the chief objects of Mr. Waterton's 'Wanderings,' but without success, I saw growing at its natural place in 1835. Humboldt, with his usual sagacity, pronounced, from the mere sticks which the Indians had brought to Esmeralda for the preparation of the poison, that the plant from which they came belonged to the *Strychnæ*; and such I found it to be, although it was at that time not in flower. I have described it as *Strychnos toxifera*.

The plant which furnishes the active principle of the urari poison having been discovered, it remained now to ascertain the mode of its preparation, and to learn what other materials are added to it. This I could only ascertain during my third expedition in 1837. The Wapisianas, but principally the Mausi Indians, are the most famed for the preparation of the urari poison. The Indians of the Orinoco itself acknowledge it, and only use the Curare, the preparation of which Humboldt witnessed at Esmeralda, when they cannot procure any of the poison made by the Macusis; the Maionkong and Guinare Indians, who inhabit the northern tributaries of the upper Orinoco, undertake journeys to the country of the Macusis, merely for the purpose of bartering the urari, giving in return the Curata, that admirable reed, which is sometimes sixteen feet long without an internode, and of which the celebrated blowpipes or sarbacans are made.—*Pharmaceutical Journal*.

(To be continued.)

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

A Register of Experiments, Anatomical, Physiological, and Pathological, performed on Living Animals. By JAMES TURNER, Veterinary Surgeon, author of a 'Treatise on the Foot of the Horse,' &c. Parts I, II, and III. London, 1839, 1843, 1847.

It is recorded of Roger Bacon, that on his death-bed he exclaimed, "I wish I had dedicated myself with less zeal to the interests of science, for then I should have been spared much suffering." It is a remarkable fact that the great philosopher who first bade mankind awake from the mediæval sleep to a contemplation of the results of experimental inquiry in the development of truth, should also have been able to teach by experience to all the great ones who were to follow in his step, the abnegation, nay, the suffering entailed, by resolute pursuit in the high road of intellectual progress. Had it been otherwise, the justice with which Providence distributes her inestimable blessings would have been violated, for there can be no doubt that successful labourers in the infinite field of scientific truth taste delights which no other human pursuit affords, and they have only a right to regard the checks and sufferings imposed by comparative ignorance, as the base metal which must inevitably enter into the composition of the human alloy. Unhappily for himself, happily for the world, Roger Bacon lived three centuries before his teaching was to bear ripe fruit; but while the world admires, men will not cease to proclaim that he gave the charter of scientific progress to all successive generations. Who will deny that the tortures of his long imprisonment have had their reward,—reward so great, so pure, so superior in every respect to all other human rewards,

as to convert the sympathy at first felt for the great philosopher's sufferings into admiration for the great truths to which they served to give immovable foundation.

We have been induced to pen these general reflections on some of the vicissitudes of scientific inquirers, as the most appropriate introduction to a brief comment on the remarkable example of the value of experimental investigations, furnished by the three memoirs of Mr. James Turner, the President of the Royal College of Veterinary Surgeons, whose spirit of penetration appears to have anticipated by ten years the remarkable discovery of Dr. Richardson, as to the cause of the blood's coagulation, to which the last Astley Cooper Prize of three hundred guineas has been awarded. A series of the most beautiful researches of modern times led the learned Doctor to the conclusion that the cause of the blood's coagulation is the escape of ammonia, the presence of which is essential to the blood's fluidity. We hope, ere many weeks elapse, to have before us the promised work of Dr. Richardson, already announced as far advanced in type; meanwhile, we have said enough to make appreciated the following quotation, with which Mr. Turner concludes the third memoir—

“The most difficult problem in physiology which remains to be solved in these enlightened days is the rationale of the coagulation of the blood. Here John Hunter himself met a barrier that his genius never surmounted, as his published works testify.

“To all inquirers into the phenomena of animal life who have halted to think for themselves, there has always been a void, a link of the chain wanting, in this division of science. Writers of the greatest research have especially pointed to the *vitality* imparted to the blood by its contact with *living* vessels, and thus reasoned on its fluidity. The more I reflect on this theory, the more I am convinced that it is in accordance and association with the retention of a volatile constituent of the blood, with which, ere long, we shall find it our business to become better acquainted.”

And in other parts of his memoirs our author insists upon a gaseous current as constant and retained within the blood-

vessels ; he maintains that rarefied air is the solvent of the blood, and that it is only when such gas finds escape that the liquid blood becomes coagulated. Now, if the scientific world confirm Dr. Richardson's discovery, it cannot be denied that Mr. Turner's opinion, pronounced as it was on the basis of experiment, is one of the most remarkable examples on record of what can be regarded as little else than scientific prophecy ; and this is true, even though Mr. Turner's memoir contain some expressions which, though compatible with the state of physiological knowledge at the time they were published, could not now be employed with due regard to accuracy. Perusal of these memoirs will amply repay every real student of nature, for they are rich in evidences of a master mind, in material for reflection which can but lead to the great end of scientific progress. Mr. James Turner is one of the many who, loving wisdom even better than gold, have been called upon to endure labours and suffer checks unknown beyond the portals of the scientific temple. But bad though the times may be, they are better than those of Roger Bacon. Mr. Turner may say with justice that had his voice been sooner echoed, the prize of discovery would have been sooner won ; but he has at least lived to occupy the chief post in our corporate body, and we trust that the present notice, a simple tribute as it is to justice and real merit, will tend to prove that Mr. Turner's zeal in the interest of science promises to receive the full share of reward to which it is unquestionably entitled.

EDITORIAL NOTE.

We omitted to state, in our last, in the report of the progress of Professor Simonds in search of the "Rinder-Pest," that he was accompanied throughout by Mr. Ernes, M.R.C.V.S., whose knowledge of the country and language very materially assisted in the acquirement of the desired information. They returned together on the 30th of May last.

THE VETERINARIAN, JULY 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE CATTLE PLAGUE.

PENDING the publication of the official inquiry, instituted by the three national agricultural societies of England, Scotland, and Ireland, into the nature and consequences of the disease which has prevailed with more or less intensity among the cattle of several Continental States, we are enabled to lay before our readers the following particulars relating to this interesting subject. Scarcely a fear need, however, be entertained that this destructive pest will reach our shores. Its present great distance from us would, of itself, afford a fair security; but when we add to this that no cattle find their way from thence directly or indirectly to the English market, and that in the event of the disease spreading from Galicia, it would have to break through a hundred military *cordons*, one after the other, before reaching the eastern side of the German States, we confess that we believe all alarm may cease on this head. If this malady were one that owed its extension to unexplained causes; if it suddenly showed itself in one part of the Continent and rapidly spread, despite all precautionary measures, to others near to or at a greater distance from its origin; if, in short, it possessed all the characters of an epizootic, then we have no doubt that, long since, we should have been both painfully and practically familiar with it in this country, and that hundreds of our cattle would have succumbed to its destructive power.

No disease that we have ever studied appears to be governed by such fixed laws as this. The Steppes of Russia are its home, and here it may be said to hold almost undisputed sway. Here also it is alone regarded as having a spontaneous origin; a point which requires, however, more investigation, in our opinion, than it has hitherto received. Certain it is that in

those countries which are contiguous to the Steppes the malady has no such origin, and its appearance therein is invariably associated with the introduction of Steppe cattle in the ordinary course of traffic.

Like smallpox and other allied affections, it lies dormant for a time in the system, during which the animal gives no indication of ill health. The period of incubation is found to vary, many animals sickening on the seventh day after exposure, and others not until the thirteenth or fourteenth. Some are said even to pass to the twentieth day before giving evidence of the malady. Such cases are few and may possibly depend on a secondary exposure to the infection rather than on so great a variation in the periods of incubation. No doubt, however, should be allowed to remain on a point like this, as on it depends the security to be afforded to other countries where the malady has not a spontaneous beginning. Austria, which suffers almost annually from this disease in some parts of her dominions, has an especial interest in the question, and should lose no time in effecting its complete and satisfactory solution. In our opinion Austria should appoint a commission of scientific men, and vest it with some of her absolute power to conduct experiments and take every necessary means of determining the question in a conclusive manner; which will be for the benefit of other countries as well as herself, and she will then both deserve and receive the thanks of the world.

What the existing visitation may have cost her has yet to be ascertained; but no less than 26,442 head of cattle are officially reported as being lost in the year preceding the present one. It has also been said that on the occasion of the Russo-Turkish war in 1827 and 1828, no less than 30,000 cattle were destroyed in Hungary, 12,000 in Galicia, and 9,000 in Moravia; so that the wonder becomes the greater that she should allow any point connected with the pathology of the disease still to remain in doubt. We will not anticipate the official report of our own inquiries, now in the course of preparation, by entering into further details, but content ourselves on this occasion by giving an outline of the symptoms and *post-mortem* appearances of the disease.

First, we may observe that it is a highly infectious malady; none more so, and that the *materies morbi* may be carried to healthy animals by persons visiting the sick, equally as well as the diseased being brought within a short distance of them. If allowed to take its natural course only for a few days, it will be found that the deaths not unfrequently number as much as 90 per cent., the major part of the animals dying on the third or fourth day from the time of the attack. When the animal sickens, the affection will be recognised by almost continuous spasmodic twitchings of the voluntary muscles of the body, more particularly those of the neck and shoulders, and of the hind quarters. These twitchings are accompanied by tremors, which are more generally diffused, and which interrupt the regularity of the spasms, and give to the animal an appearance of suffering from exposure to cold. The coat stares, and the patient stands with its back arched and its legs gathered up under the body, but does not seemingly suffer much acute pain. In the course of a few hours rumination is suspended, and the appetite fails, but water will generally be partaken of almost up to the end. The temperature of the body is variable, a slightly increased warmth of skin existing at the beginning of the illness, but which soon gives way to a chilliness of the surface, and this again to a deathly coldness of the ears, legs, and horns, as the malady advances to a fatal termination. The pulse is scarcely disturbed at first, unless the attack is a severe one, when it quickly rises to about 70, but wants tone in its action. In all ordinary cases it becomes gradually more frequent in number, but less in force, and in the latter stages can only be felt at the heart. The respiration is but very little altered at the commencement; it rarely becomes difficult, and was never painful in any of the cases we witnessed. It sometimes rises to thirty on the second day; but as the contractions of the abdominal muscles are often interrupted in their rhythmical action by the spasmodic twitchings a singular motion is given to the animal's flanks, which has led some observers to speak of a difficulty of breathing being present. A discharge comes on early from

the nostrils, which has many of the characters of ordinary mucus, but, when carefully examined, will be found to contain flocculi of lymph. A slight cough is also present in some cases, but it cannot be heard except when one is near to the patient, when it imparts a singular and almost indescribable sound to the ear. Some idea may be formed of this by calling to mind the kind of cough which would exist if a broken-winded horse were suffering from soreness of throat.

The expression of the countenance does not denote acute suffering, and the eyes are without any dull appearance except in the advanced stages of the malady, when the lids are found to be drooping as in sleep, and the ears to be a little lopped. The vessels of the conjunctival membrane are almost without turgescence, but a discharge in most cases come from the eyes, which accumulates in a yellow jelly-like mass at the inner angle, and when examined is likewise found to be composed principally of lymph. The bowels are but little disturbed at the very beginning, but soon the feculent matter, almost unaltered in consistency, is passed in increased quantity, and in the course of the second day diarrhœa has set in. This diarrhœa is presently followed by dysentery, which continues to the end. The evacuations are not particularly offensive, but they are remarkably fluid, of a dirty-yellow colour, and mixed with numerous small flocculi of lymph. Occasionally a little blood stains the evacuations, and tenesmus is also present in some cases. The abdomen becomes much pinched in, and the animal's strength quickly fails him. He now keeps mostly recumbent, and rises very reluctantly. If made to move he staggers, and often falls for want of strength. The spasmodic twitchings, however, begin to diminish, and for some hours before death they have passed off entirely. A sickly smell attends the patient, but there are no disengagements of gaseous compounds into the areolar tissue, nor other indications of the decomposition of the tissues which have been spoken of. In short the animal dies, apparently, and that, almost without convulsions, from pure prostration of the vital powers. He

sinks sometimes as early as the second day, and rarely lives beyond the fourth.

The morbid lesions will be found centred in the mucous membranes, which are more or less affected throughout the entire body. Commencing at the mouth, it not unfrequently happens that some of the conical papillæ, here and there, at their bases on the body of the tongue, will show that the epithelium is broken up by the ulcerative process. The root of the tongue, fauces, and *velum palati* are implicated to a greater or less extent; their follicles are filled with effused lymph, giving to the parts an appearance as if dotted over with some yellow pigment. Some of the follicles are ulcerated, but the major portion are merely distended with lymph.

The tonsils are in a similar condition; and when a section is carried through their long diameter, large portions of lymph can be drawn from their ducts, the yellow colour of which, interspersed in lines, contrasts strongly with the red substance of these organs. Much turgescence of the vessels of the Schneiderian membrane, and points of ulceration and shreds of lymph, are met with about the posterior nasal opening, and base of the vomer. These lesions, however, rarely extend beyond the middle portion of the *septum nasi*. The pharynx presents the same appearances, but the œsophagus is healthy, as is the rumen and reticulum in most instances. In some few cases the epithelium readily peels from off the inner surface of these stomachs, when the vessels beneath will be found turgid with blood. The rumen is also found to contain a fair quantity of ingesta in the state usually met with in healthy animals. The omasum is without structural change, or at most its mucous surface presents a like condition to that of the rumen and reticulum. The contents of the omasum are frequently so dry and hard that they can be rubbed to powder between the fingers. This has been considered by many Continental pathologists as a peculiarity attaching to this disease, and hence the term *Löser dünne* has been given to the malady. In three consecutive *post-mortem* examinations we found, however, that

this stomach and its contents were normal. The mucous membrane of the abomasum is highly congested, more particularly towards the pylorus; and its follicles are in an analogous state to those of the *velum*. The duodenum, jejunum, and ileum are similarly affected, but to a greater extent. These intestines also often present a bluish aspect on their serous surface, but which is entirely due to the turgescence of the vessels of the mucous membrane giving a depth of colour to it which is seen through the other coats. Peyer's glands are not invariably diseased, but, like other follicular openings, they are often found covered with layers of lymph, beneath which ulceration is occasionally seen, but more often the surface is healthy, although turgid with blood.

The chief ravages of the disease have been by us met with in the large intestines. The blind end of the colon—the cæcum—was, in one case in particular, ulcerated over several inches of surface; that is, numerous small and distinct ulcers existed, which had evidently had their origin in the follicles of the intestine. Deposits of lymph, varying in size from that of a pea to the end of the finger—scabs, as they have been designated—studded the large intestines almost throughout their whole extent. They were of a dirty-yellow colour, and adhered with tolerable firmness to the mucous membrane. In some places ulceration was found to be going on beneath them; in others this destructive process had ceased and the healing one has commenced; and in most no change in structure could be observed.

The substance of the liver is healthy; in all cases the gall-ducts, however, contain layers of effused lymph, and sometimes to an amount sufficient to block up their passages. The gall-bladder is filled with bile possessing its ordinary characters, but the inner surface of the bladder is precisely in the same state as the mucous membrane of the large intestines. The kidneys are healthy, and the urinary and generative systems unaffected.

The larynx is occasionally slightly ulcerated, particularly on the edge of the ary-tænoid cartilages; no ulceration, however, has been seen by us throughout the whole extent of the windpipe and bronchial tubes; but thin layers of effused

lymph lying in close contact with the mucous membrane are almost invariably present. The lungs are healthy, of a normal colour, and often remarkably free from congestion. Their serous membrane is also unaffected. The heart is healthy, occasionally rather flaccid, and without blood in its cavities. The blood in all the vessels is *fluid* and of a dark colour, evidently from a loss of its fibrine. The brain and spinal marrow give no evidence of structural change; an increased quantity of fluid is, however, often found in the ventricles of the brain, but especially in the upper part of the theca vertebralis. The flesh is firm, of a good colour, and has but little tendency to pass quickly into decomposition. Indeed, the first *post-mortem* examination which we made was of an animal that had died sixty-eight hours before, and was buried directly after an examination of it had been instituted by the Austrian Commission with which we were domiciled. In this case the flesh was found in a state not even unsuited for food. We trust we have said enough to give our readers a fair idea of the nature and consequences of the "RINDERPEST."

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL, HELD MAY 13, 1857.

PRESENT:—Messrs. Burley, Cheesman, Cherry, Constant, Dickens, Field, Gabriel, Goodwin, Jex, Jones, Robinson, Stockley, Turner, Wilkinson, Withers; Professors Spooner, Morton, and Varnell.

On the motion of *Mr. Gabriel*, seconded by *Mr. Robinson*, Mr. STOCKLEY took the chair.

The minutes of the preceding meeting having been read and signed, the election of a President for the ensuing year was proceeded with.

It was moved by *Mr. Goodwin*, in a highly complimentary speech, and seconded by *Mr. Field*, that Mr. James Turner be elected President of the Royal College of Veterinary Surgeons for the ensuing year; and on the ballot being taken that gentleman was declared unanimously elected.

The President having taken the chair, and acknowledged

the honour of his election, the election of six Vice-Presidents followed, the following gentlemen being nominated for office : Messrs. Bracy Clark, Walton Mayer, Edward Price, John Hawthorn, William Bryer, Edward Stanley, Henry Crewe, W. Amos Packwood : and on the ballot being taken, Messrs. Bracy Clark, of London ; Walton Mayer, of the Royal Engineers ; W. Amos Packwood, of Coventry ; Edward Price, of Birmingham ; William Bryer, of Cheltenham ; and Edward Stanley, of Birmingham, were declared duly elected.

The ballot having been taken for the election of a Secretary, and also a Registrar, Mr. Gabriel was declared unanimously re-elected to these offices.

The Finance Committee, the House Committee, the Registration Committee, and the Committee for General Purposes, were also unanimously re-elected.

E. N. GABRIEL.

Veterinary Jurisprudence.

WAKEFIELD COUNTY COURT.

(*Before* T. H. MARSHALL, Esq.)

GLOVER *v.* SWALLOW.

Mr. Barratt appeared for the plaintiff, and *Mr. Wainwright* for the defendant. This action was brought to recover the sum of £6 15s. under the following circumstances :

On the 21st of November last, defendant's son brought a gray mare to Wakefield, for Mr. Glover to look at, in order that he might purchase her if they could agree upon terms. She was harnessed in a phaeton, and Mr. Glover got into it, and rode along with the defendant's son down Southgate and round by Market Street. After this he bid young Mr. Swallow £19 for her, but the offer was rejected on account of a difference of 10s. between the price that was asked and bid. Mr. Thos. Glover, the plaintiff's son, immediately after, with the consent of his father, went into the Black Swan, and eventually closed a bargain with the defendant's son, that the mare should be delivered to Mr. Glover on the following Monday for £19 10s. Upon that day a young man of the name of Firth, a servant of the defendant's, came with the mare to Mr. Glover's, bringing a written request that the

money might be paid to him. This young man was asked to give a receipt by Mr. Glover, but as he could not write he made his mark to a document that was handed to him by Mr. Glover, and which he (Firth) now swore was never read over to him, and which he believed was only a receipt, as not a word was ever said to him about a warranty. On the other hand, Mr. Edwin Middleton swore most distinctly that the warranty was read over to Firth before he was asked to make his mark to it. When the mare was taken into the stable, Mr. Glover immediately found that she was a crib-biter, and sent her back to the defendant, who refused to take her in. On the 13th of January, plaintiff served the defendant with a notice that he should sell the mare, and on the following Friday she was sold by auction for £16 to Mr. Illingworth, who afterwards sold her for £16 10s. to the defendant, in whose possession she now is.

Mr. Morville and *Mr. Cuthbert*, veterinary surgeons, stated crib-biting to be a vice that constituted unsoundness.

For the defence, it was urged that no warranty had been given with the consent of the defendant, and that the signature of the young man who delivered the mare had not been given with defendant's consent.

Several witnesses were called upon both sides, some of whom, for the plaintiff, swore that a warranty had been particularly stipulated as part of the bargain, while, on behalf of the defendant, others swore as positively that the subject of warranty had not been named.

The case occupied the attention of the Court for a very considerable time, and when his Honour was called upon to give his decision, he said that it was impossible for him to give a verdict without convicting half a dozen witnesses on either side of perjury. Under these circumstances he would defer his judgment in order that he might take time to make the best he could of the evidence, such as it was, and where eight or ten witnesses had sworn as flatly contrary to each other as they could.

GLOVER *v.* GREAT NORTHERN RAILWAY COMPANY.

THIS action was brought to recover £7 6s. 6d. for injury sustained by a pony while on its passage to London, on the 6th of June last, and £2 5s. 6d. which had been paid on that occasion for its fare. Mr. Barratt appeared for the plaintiff, and Mr. Westmorland for the defendants.

A little before seven o'clock in the morning of the above day, Mr. Thomas Glover, son to the plaintiff, took the pony to the Wakefield Railway Station, and having there delivered it to one of the porters, he paid £2 5s. 6d. as its fare to London. About ten o'clock a porter came to Mr. Glover's to say that the Company had received a telegraphic message from Pontefract, to the effect that a misfortune had happened to the pony, and shortly after it was returned to Mr. Glover, who called in Mr. Cuthbert, veterinary surgeon, who now spoke to the nature of the injuries it had received, and who stated his opinion that the probable cause of those injuries had been through the improper tying up of the pony—in fact, that the shank of the collar had not been sufficiently tight, and had so enabled it to get its leg over it, by which means it had thrown itself down.

Mr. James Bollans, whose brother is a very extensive horse-dealer, and who has the superintendence of many horses that travel by rail, stated his opinion, that if the pony had been properly tied, the accident, as imputed by the plaintiff, could not have happened.

For the defence it was asserted that the pony had been tied up with the greatest care, and that the accident had arisen either from sudden fright, the restiveness of the pony, or from some other cause over which the Company had no control; and with respect to the £2 5s. 6d., it was shown that one of the Company's clerks had offered to return the money to Mr. Glover, although there was no legal obligation on their part to do so.

Mr. Westmorland then proceeded to call witnesses, and in contradiction to Mr. Thomas Glover, who had sworn that he never entered the box in which the pony was placed, *Henry Jackson*, the porter who tied the pony up, and *William Hanson*, the head porter at the Wakefield Station, both positively swore that Mr. Thomas Glover was not only in the box, but had particularly observed that great pains had been taken in the tying-up of the pony, and that he should acquaint his father of the great care that had been used.

Mr. Samuel Smith, the booking-clerk, noticed the shaking of the box in which the pony was before the train started, on account of its restlessness; and the guard of the train, whose attention had been directed to the pony by Hanson, frequently looked after it; and while the train was between Featherstone and Pontefract, he discovered that it had thrown itself upon its back. Upon arriving at Pontefract, the horse-box was at once detached from the train, and the pony was got up and taken out; and *Mr. Brooke*, who was then station-master at

Pontefract, now spoke to the secure manner in which the pony was tied, and both he and *Mr. Kaye*, the veterinary surgeon who was called in to examine the pony, stated that, in their opinion, the accident had arisen from the falling, or the throwing of itself down of the pony, and not through any neglect in the proper tying of it up.

Mr. Barratt and *Mr. Westmorland* both delivered able addresses in support of their respective theories, after which—

His Honour said there appeared to be no grounds whatever in this case to fix the Company with the damages. There had been no special agreement signed to release them from all risk in the carriage of this animal, nor had their plea in defence been to that effect; but the Company were not bound in law to insure against injuries of a purely accidental nature. The question was, did the injuries complained of arise from any want of care on the part of the Company's servants, or from some of those unaccountable accidents which must necessarily sometimes happen when animals are conveyed by rail? It appeared quite clear to him that the Company had not been guilty of any neglect, for he had never heard stronger evidence as to the fact of the animal's having been carefully put into the box, and properly tied, and though there was a discrepancy in the evidence of the plaintiff's son and the Company's servants, yet the evidence of the latter, as to the proper tying of the pony, was strongly corroborated by that of those whose attention was called to it at Pontefract. It was not clearly made out how the accident really did happen, but he should rather infer that it was from some unexplained cause, than from any fault or want of care on the part of the Company; and he was of opinion, therefore, that the Company were not liable for damages. The question of the £2 5s. 6d., that had been paid for the fare, must be left in the hands of the Company to do as they thought right about: they were not bound to return it, for the violation of the contract did not rest upon them. The verdict, therefore, must be for the defendants.

Mr. Westmorland applied for costs, and *his Honour* said that the Company must use their own discretion in the course they should pursue, but he did not see any reason for departing from his ordinary rule of giving costs with the verdict.

MISCELLANEA.

NEW EXAMPLES OF SAGACITY IN BRUTES.

WHEN in Ceylon many years ago, a friend of mine, who was deputy-quartermaster-general, consulted me about an elephant belonging to his department, one that had a deep burrowing sore on his back, just over the back-bone, which had long resisted the ordinary mode of treatment employed. After due examination, I recommended as necessary the free use of the knife, that issue might be given to the accumulated matter; but no one of the ordinary attendants would undertake the operation. Being assured by my friend that the brute would behave well under it, I undertook it. The elephant was not bound; he was made to kneel down, his keeper at his head: with an amputating knife, using all my force, I made the incision requisite through his tough integuments; he did not flinch, but rather inclined towards me when using the knife, and uttered merely a low and suppressed groan; in short, he behaved very much like a human being, as if conscious, as I believe he was, that the pain inflicted was unavoidable, and that the operation, as I am happy to say it proved, was for his benefit. From the elephant I will pass to the dog. The then Governor of Ceylon, the late Sir Robert Brownrig, had one of more than ordinary sagacity; he always accompanied his master, being allowed so to do, except on particular occasions, as on going to church, or council, or to inspect the troops, when the general always wore his sword. Now, when he saw the sword girded on, he would give his attendance no further than the outer door; without a word being said, he would return and wait the coming back of his master, patiently waiting upstairs at the door of his private apartment. Here is another instance. Once, when fishing in the Highlands, I saw a party of sportsmen with their dogs cross the stream, the men wading, the dogs swimming, with the exception of one who stopped on the bank piteously howling; after a few minutes, he suddenly ceased, and started off full speed for a higher part of the stream. I was able to keep him in view, and he did not stop till he reached a spot where a plank connected the banks, on which he crossed dry-footed, and soon joined his companions.—*Dr. Davy's 'Angler in the Lake District.'*

THE
VETERINARIAN.

VOL. XXX,
No. 356.

AUGUST, 1857.

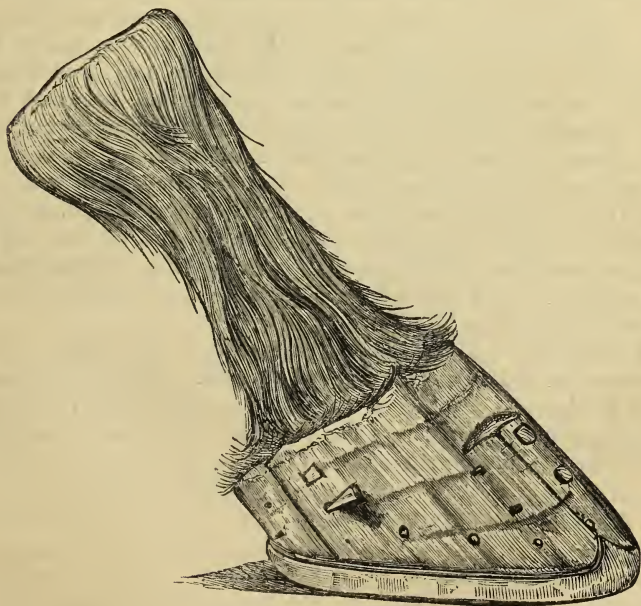
Fourth Series,
No. 32.

Communications and Cases.

TREATMENT OF SANDCRACK.

By JOHN ELLIS, M.R.C.V.S., Liverpool.

DEAR SIRs,—I forward an illustration of my treatment of sandcrack for publication in your journal. (*See woodcut.*)



It will be perceived that I have shown the disease as existing at the inner and outer quarters, and also at the toe.
xxx.

I intend the front or toe to show a foot with some three months' growth after the treatment. At the quarters it is intended to represent a foot recently treated; for the fissures are up to the coronet. On one side a nail is left loosely driven so that more clearly may be seen the mode of driving it.

The plan suggested itself to me in the year 1832, since which period I have operated on many hundreds of cases, indeed I may say thousands, and invariably with success. My practice before operating is first to poultice the foot to abate the inflammation and lameness, and when requisite to dress with diluted nitric acid; as, for instance, in those cases where there is any fungous growth existing; and on no account to close the crack, if so be there is fungoid matter, or even dirt in it, for this would produce increased lameness, and set up much constitutional disturbance, which sometimes is not very easy to allay. I now take a small gouge, or the crooked end of a drawing-knife, and cut on one side of the crack a sufficient depth so as to get a firm but not too deep a hold, and then drive the nail directly across the crack, hammering it well home, and clinching it: the head of the nail will thus fit into the hole where the horn has been cut out. The projecting portion of the head of the nail is be rasped off. All the horn is then *carefully cut away transversely at the coronet*, and thereby all communication between the new growth and the fractured portion is effectually cut off. The denuded part is dressed with nitric acid, or it may be touched with the hot iron. Rub a little tar (in summer pitch) over the part so as to fill up the crack, and bind tape firmly round the foot, directing it to be kept as wet and as cool as possible. This is all that is requisite in nineteen cases out of twenty. Allow a day or two's rest, and the horse may go to work as usual.

I recommend a bar-shoe to be employed, giving equal pressure on the crust and frog all around. The advantage of this is obvious. When a bar-shoe is objected to by the owner, which is sometimes the case, I let the plain shoe bear upon the heel under the crack.

I am, my dear sirs, yours.

To the Editors of the 'Veterinarian.'

A CASE ILLUSTRATIVE OF THE CONNECTION
THAT MAY EXIST BETWEEN DISEASE OF THE
HEART AND A PROFUSE DISCHARGE FROM
THE NOSTRIL, ACCOMPANIED WITH COUGH,
DYSPNŒA, &c.

By ROBERT BOWLES, M.R.C.V.S., Abergavenny.

IN November, 1855, a highly bred entire horse was purchased by Captain W. The horse was eighteen years of age, and very poor and weak, but as he had been much neglected by his previous owner, it was supposed that he would, with care, soon regain condition, and become of value both as a hunter and stallion. He was put into a loose box, and given two feeds of corn a day with hay, &c. His improvement, however, was very slow, but as he was a confirmed crib-biter it was supposed that this habit had much to do with his lean appearance. At the end of two months he was removed to another stable, and two or three days afterwards was observed to suffer from a cough, similar to that which accompanies broken wind. About three weeks after this a discharge of a yellow colour and muco-purulent character took place from the off nostril. This continued for about six weeks, becoming at length profuse, and very much increased by exercise. When first taken out of the stable he was always very high-spirited and unruly, but after walking for about an hour or so he became much fagged. He always fed well, but the food did not remain in him so long as it should have done, although the fæces were hard and small. A dose of physic was administered, which pulled him down excessively. Subsequently to this, tonics, consisting of the sulphate of iron and gentian, were given, and perfect rest enjoined. Under this treatment the discharge abated, and the horse improved somewhat in condition; but still, exercise had the most depressing effect on him. It was, moreover, observed that if he were trotted or cantered against a hill he almost immediately broke out into a profuse sweat; his nostrils became dilated; his countenance anxious; and his respiration as hurried as after a hard gallop; he also, at the same time, coughed up enormous quantities of muco-purulent matter. It was likewise noticed that the jugular vein on each side filled from the bottom upwards, between every beat of the heart, as though they were suddenly injected from below. Frequently, on attempting to move him while in this state, he staggered and appeared likely to fall.

On placing the ear to the chest, when he was quietly at rest in the stable, a good deal of moist rattling could be heard from the air bubbling through the mucus in the bronchial tubes, but it was evident that the chief mischief was cardiac; for, besides the action of the heart being accelerated and irregular, and the impulse greatly increased, a very distinct musical blowing sound was heard, very like the cooing of a dove. This sound invariably took the place of the short, sharp, second, or diastolic sound, and at the same time the jugulars were filled as before described, though not in so marked a degree as just after exercise.

Remarks.—The interest of this case not only consists in its reference to pathology, but also in its relation to veterinary jurisprudence; for soon after the horse was bought he was observed to have a cough, accompanied by an enormous discharge of purulent-looking matter from the nostrils; and this, together with his “lean and hungry look,” at once suggested to the purchaser the idea of pre-existing glanders, and indeed to give an opinion on this subject I was first consulted. I came to the conclusion that it certainly was not glanders; but then arose a further question,—“Did the disease exist before purchase?” This, I was not at first prepared to answer, for from all I could ascertain the discharge from the nostril did not appear till a certain time after purchase, and bronchitis may have supervened in the interim. Now, however, I have but little doubt about the matter, having drawn the following deductions from careful observation of the then existing symptoms, viz., that valvular disease of the heart had existed for some time, and as soon as the animal was subjected to active exercise the lungs became highly engorged, from the great check to the circulation, and the direct result was a profuse secretion from the bronchial membrane. The principal causes of my arriving at such a conclusion were, the very irregular and accelerated action of the heart, with increased impulse, and above all the peculiarly distinct abnormal sound which took the place of the second sound of the heart. The sequence of causes of such symptoms will be found very clearly explained in Watson’s ‘Practice of Physic,’ and in all works on auscultation. In the case before us they would appear to stand thus:—At the moment the peculiar cooing sound is heard, the currents of blood should be flowing from the auricles into the ventricles, and at the same moment the pulmonary and aortic valves should close and prevent the return of blood from the large vessels into the ventricles. Now, it is the sudden closure of these valves that is believed chiefly to give rise to the short, sharp,

diastolic sound, and which in this case was superseded by a murmur. If these valves were from any cause imperfect, the blood would, from the resiliency of the arteries, rush back into the ventricles, and thus evidently cause an unnatural sound. Was this the case? or did the murmur depend upon some morbid condition of the auriculo-ventricular valves, as the blood is proceeding on its ordinary route? According to medical authors the former is by far the more common cause; and this idea is borne out by the absence of the diastolic sound, which would probably have been easily distinguished had the arterial valves been natural. Presuming, then, that the valves of the aorta were imperfect, the other symptoms, both general and physical, are readily explained. The blood rushing back into the ventricle would distend it unnaturally, and greater effort would be required to empty it; therefore, the increased impulse, irregular action, &c. The ventricle being unnaturally distended would check the current from the auricles and gorge them; from this the current in the pulmonary veins would be delayed, consequently the lungs would become congested, and from such a state one would infer that the cough, discharge from the nostrils, and the extreme dyspnœa after violent exercise arose. The staggering about, and other brain symptoms, would result from the irregular and imperfect supply of blood to the brain.

I had intended appending a description of the *post-mortem* appearances to this case, but unfortunately the horse was killed a few weeks since without my knowledge, and therefore this valuable opportunity of testing diagnosis by pathology was lost; but the exact correspondence of all the symptoms, general as well as auscultatory, with those described as occurring in man, leaves no doubt in my mind as to the nature of the case. I trust, however, that many readers of the *Veterinarian* will now record their experience on this subject, and thus help to show how far the heart is concerned in many affections of the respiratory functions; the causes of which appear to me as yet but unsatisfactorily explained.

CASES FROM MY NOTE-BOOK.

By R. H. DYER, M.R.C.V.S., Waterford.

PARALYSIS.

HAVING, during the past twelve months, had several cases of *paralysis* under my care, I have thought a brief

recital of some of them may be somewhat interesting to the members of the profession.

May 1st, 1856.—I was sent for to castrate three yearling colts, the property of a nobleman in this county. The first was operated upon in the usual manner, by means of clams. When unfettered, he rose and walked about perfectly well. No. 2 was castrated in the same way as No. 1. He rose up when released from the hobbles, staggered a few paces, fell down, and never afterwards stood up. No. 3 was then cast, and operated upon in the same manner. This last did not struggle much after he was secured, yet he never stood up afterwards. I particularly noticed that, in case No. 2, the animal struggled violently, until the second testicle was tied with the clam, after which he became tranquil. These two colts were ordered by the owner to be destroyed.

I shall not, upon the present occasion, offer any remarks as to the cause of paralysis in the above-mentioned cases, but will defer them until some future period, when I hope to be able to place upon paper the result of some experiments I have been making this year upon the various methods of castration.

May 28th.—I was requested to fire the fore legs of a brown gelding, which were groggy. The groom imagined the firing-iron had a charm, and would put strength into the legs again. I objected to firing, giving my reasons for so doing. One was, that I did not consider the risk of casting ought to be run for such a case, as the operation would not prove beneficial to the horse. Moreover, I had fired the hind legs, *much against my will*, one month before, and, from observations I had then made, I was apprehensive of the result—namely, that what is termed broken-back would occur. The horse, however, was cast, and easy enough, but his struggles when hobbled were most violent. The operation being over, he was released, but was unable to rise from the operating bed. After a careful examination I was enabled to ascertain that he had sensation to a perfect degree, but motion there was none. I had the poor brute assisted to rise and stand, and endeavoured to place him in slings, but all was to no purpose. The pain he suffered was so acute, that I deemed it best to allow him to lie down again, as I was of opinion he would not survive long. I did all I could to relieve his sufferings, but without result, as he died the following day.

Case 3 was a chestnut mare, the property of a clergyman at Annestown. She was four years old, and in training by a horse-rider in the months of January and February last. After being ridden on the 3d of the latter month, she laid

down in the stable, seemed in pain, and was unable to rise, although efforts were made for that purpose; besides which, she was assisted to do so. After the lapse of a few hours I was directed to go and see her.

The symptoms and appearances, when first I saw her, were as follow: violent struggles with the fore limbs; the hind ones powerless; profuse perspiration; pulse and respiration accelerated during the paroxysms; fæces hard and scanty; bladder distended with fluid. On introducing a catheter, I removed upwards of *two gallons* of urine, which was of the colour and consistence of thick porter, and had a strong odour. The removal of this seemed to give the animal much relief, but only for a short space of time. A draught was then administered, consisting of Sol. aloes, Tinct. Opii, Spt. Æth. Nit., et Spt. Ammon. comp. Over the loins was applied a sinapism, and portions of the above-named mixture were ordered to be given every four hours until relief was obtained. I left strict injunctions not to allow her to attempt to get up, and, to prevent this, several men were placed with her for that purpose day and night. She remained down, after I saw her, upwards of *thirty* hours, when she seemed determined to rise, and, with the assistance of a few men, she got up and walked about. I had her taken into a field and walked for half an hour, and from that time she continued to recover rapidly.

The next case was a grey gelding, the property of a lady at Woodstown. He was an aged horse. On Monday, May 4, 1857, this horse was in town, distant about seven Irish miles from Woodstown. He did his work as well as usual; but on his going out of this establishment, I remarked that his gait was imperfect, especially on turning round a corner. At the moment I was under the impression that he had struck his hind foot, as he had cut his leg since the last time he was shod, and I thought it just possible that this was the cause of the peculiar action. In a few hours, however, I was sent for to see him, as he was unable to keep upon his legs. The servant said that, in going up the hill near the house, the horse staggered. On my arrival I examined him, and found paralysis of the hindermost parts present. I gave him a draught similar to the one before described, and as soon as that was done, he fell down in the box. The treatment from first to last was similar to the other case, but no effort of mine could save him. He died during the night of Tuesday.

The next case, and the last I shall trouble your readers with, was one which occurred on Friday, the 12th of June.

The patient was a brown gelding, three years old, the property of a farmer residing at Annestown, distant twelve miles from Waterford. The owner was riding the horse the day previous, for the second time, a distance of only two miles, when he found him going "wide." He immediately dismounted, put him into a field by the road-side, and soon after this the animal fell. The next day I was requested to attend him. He had been lying in the field all night. The symptoms present were not so violent as the last case reported, but he was unable to rise. He was therefore got on his feet by the aid of some strong, able fellows, when he wheeled about several times upon his haunches, and fell down upon his side. I removed the contents of both the rectum and bladder, administered a powerful dose of aloes, &c., and employed an embrocation composed of Liq. Am. Fort. and Ol. Lini, part. æqual. to the lumbar region. I also gave instructions not to allow the horse to injure himself in his attempts to rise. The following day, with the assistance of a few hands, the animal got up, and is now doing well.

Mr. Percivall, in his 'Hippopathology,' p. 41, under the head Palsy, writes—"No hopes can be entertained of a case arising from casting or fall, or other violent injury; and, therefore, the advice may, without hesitation, be a pistol-shot." I am much indebted to the writer's works for very valuable information, at the same time it is always necessary to receive advice, such as that just quoted, and even from so well-known and esteemed a pen, with caution, since it has fallen to my lot to witness a good many cases of palsy, which arose from casting, &c., and, after some patience and care, the animals have recovered, and lived and did well afterwards.

As I intend, hereafter, collecting together my notes for the past few years bearing upon the subject of paralysis, I shall then include those cases that arise from various causes, such as castration, casting, falls, hematuria, indigestion, &c.

COMMUNICATION

By R. H. HOLLOWAY, M.R.C.V.S., V.S. 2d Madras L. C.

GENTLEMEN,—Had the several communications which I had the honour to forward you last year, met with less courtesy at your hands, I should, no doubt, experience less regret than I do, at having been unable to continue them.

For some months past, my field of labour has been exclusively almost confined to the more beaten track (in Indian cavalry practice,) of cases of Flatulent and Spasmodic Colic, "Off Feed," accidents, and lameness, none of which have been sufficiently striking to render them worthy of comment.

It is not, I believe, to be attributed to indifference, nor even to the enervating effects of this climate upon the European constitution, that, comparatively, so very little of Indian army veterinary practice and experience is to be found recorded in the pages of the *Veterinarian*.

I hope that there are some amongst us who are desirous to contribute, were it (to quote from your last March leader, p. 178), "only a small stream to the ocean of truth," and thus to fulfil, in some measure at least, "Lord Nelson's pass word:" but where the *element* is *not*, we cannot reasonably expect the "stream."

No water, no stream, nor irrigation to produce fertility of soil, and fruitful harvests. The labourer may toil assiduously, and cheerfully endure "the heat and burden of the day," and yet the sterile land will yield a crop but very inadequate and ill-proportioned to the honest culture and the care bestowed upon it.

I am convinced that the *offerings* from the "far East" would be much more regular and frequent, did the fields of labour present generally more of novelty and variety than they do. There is work, and an abundance of it, for one possessed of a conscientious mind, but (although interesting enough to the practitioner himself,) without cases of sufficient *import*, it is difficult to make *frequent* communications.

I am not, I assure you, writing thus because I feel aggrieved by your somewhat frequent allusions and plain speaking to "friends in the East." On the contrary, I tender you my hearty thanks for imparting these healthy *stimulants*, which we *all* perhaps, more or less require, and emanating as they do from our Alma Mater, they cannot be otherwise than acceptable to the right-minded and right-thinking portion of its members.

CASE OF ABSCESS NEAR THE ACETABULUM.

During the perusal of the *Veterinarian* for March last, I was reminded by the record at pp. 140, 141, of "Caries of the Hip-joint," of a case (though not identical,) that occurred some time ago in my own practice.

A horse, very lame in the "near thigh," was admitted for treatment.

The tumefaction of the haunch and thigh was so excessive that the cause was rendered very obscure, and the examination conducted necessarily under very unfavorable circumstances.

Antiphlogistic remedies were adopted, and every adjunct employed to reduce the swelling and remove the existing lameness.

The horse, notwithstanding, grew worse, and fell off daily in condition, until about three weeks subsequently to admission he fell down, and became quite unable to move.

During the latter period the pulse and respiration were much disturbed, and indicated, with other concomitant symptoms, acute suffering. Considering it to be a hopeless case, and unwilling to protract the sufferings of the poor animal, I recommended that he should be destroyed. This having been fulfilled, the post-mortem examination disclosed a deeply seated abscess close to the brim of the acetabulum, and implicating the gluteal and ileo-femoralis muscles.

Remarks.—To pronounce with absolute certainty that lameness was produced by “Caries in the Acetabulum Joint,” I should think (as Mr. Gibson, I believe, implies in the case I have cited,) very problematical. Might not fracture of the head, or even of the neck of the femur, or injury to the ligaments of that bone in connection with the acetabulum be confounded with this?

I am free to confess that in the latter stage of the case I have above briefly set forth, I anticipated the presence of some such lesion.

The enormous tumefaction, however, as I have already hinted, prevented the institution of a satisfactory manual examination, and thereby precluded the possibility of a very precise diagnosis.

I am unwilling to trespass further upon your time, therefore, with best wishes for the prosperity of your journal, I beg to subscribe myself,

Gentlemen, very faithfully yours, &c.

CASE OF INVERSION OF THE UTERUS OF A MARE.

By W. FURNIVALL, M.R.C.V.S., Kingston.

I AM induced to forward you the particulars of a case of inversion of the uterus in a four-year-old cart-mare, not being able to find a similar occurrence recorded in the pages of

your journal for the last four years, and this being the first I have seen.

Saturday, May 30th, 6 a.m.—Mr. Smith, of the Rabber, summoned me to attend a young cart-mare, which had foaled in a meadow at 4 a.m.; soon after which she heaved violently, and ejected her womb. The foal was a dead one. The owner, with some assistance, removed her to a shed close by; on my arrival at which, she laid down, and was secured by ropes in that position. Having been called to a mare at the Knap Farm, which was unable to foal, about ten minutes before Mr. Smith's messenger arrived, I directed that the womb should be carefully guarded from straw, dirt, &c., by placing cloths round it, frequently to sponge it with warm milk-and-water, the hind quarters to be raised with straw, and to allow the mare a bran mash and oatmeal gruel if she would take it while recumbent. At half-past 11 a.m. I reached the patient (seven hours after the ejection of the womb); and after making a careful examination of the organ, I sponged it with brandy slightly diluted. Having the assistance of a neighbouring friend, I succeeded, after some time, in returning the organ; and by keeping my hand within it for half an hour at least, obtained some little contraction of it. I then removed the placenta without loss of blood, and inserted interrupted metallic sutures through the labia. In half an hour afterwards I was pleased to see that the mare was up and eating a mash, but her pulse was too quick to ascertain with any accuracy its range per minute. I directed the attendant to clothe her well, allow plenty of fresh air, and her diet to be mashes and clover given frequently, though in small quantities, with oatmeal gruel *ad libitum*.

Warm fomentations were ordered to the labia three times a day.

June 2d, 10 a.m.—The mare is doing well; pulse 58; visible mucous tissues of their natural hue; appetite keen; discharge from vagina of a healthy character; urine of a very dark brown colour, with saline deposits.

Exhibited a mild diuretic ball; removed all the sutures, and ordered tepid water to be thrown into the vagina twice a day. The fomentations and diet to be continued as before.

I have received daily reports of the mare from Mr. Smith up to this time, although I have not seen her myself, and to day he informs me that she is quite well and turned out to grass, but housed at night. Allowed her some bran and oats, with a fair quantity of clover hay.

TUMOUR ON THE COCCYX OF A COW.

By W. D. BRAY, V.S., Broughton-in-Furness.

ON the 9th of April, 1855, I was requested to visit a cow belonging to Mr. W. Procter, near this place, which had a large tumour pending from the under surface of the coccyx. It had been increasing in size for several months, was of an oval form, flattened at the part of its attachment, of a dull red colour, hot, and painful to the touch; indeed, so painful was it, that the poor animal often moaned when moving the tail. Her appetite was nearly gone, and she was rapidly losing flesh. I at once informed the owner that the best method of treatment was excision; but as he wished something to be tried previous, I endeavoured to remove it by ligature; but this causing so much pain to the cow, he at length consented to its being taken off by the knife and actual cautery. After having properly secured the animal, I proceeded to excise the tumour with a large bistoury, beginning at the upper surface, and staunching the hemorrhage as I went on with the actual cautery. I thus carefully removed the tumour, but to my surprise I found that the sixth bone of the coccyx had been fractured. It was much decayed, brittle, and perfectly black in appearance. It was impossible to have ascertained this before the operation was performed, in consequence of the parts being so much enlarged around and adjacent to the vicinity of the tumour. I now anticipated no good result from the operation, and amputation was finally resorted to, which succeeded. The cow was milked for a couple of months, then turned out to feed, fattened, and eventually slaughtered.

The morbid specimen after removal presented an irregular oval shape, and was composed of a number of cells, or cavities, each of which was composed of a substance much resembling soft cartilage. Some of the cells were larger than others, and all contained more or less blood. Those at the under surface of the tumour contained fluid blood of a delicate pink colour, whilst at the upper part, near its attachment to the coccyx, the cells contained clots of coagulated blood, which had imparted a dark red colour to that part of the tumour.

The circumference of the tumour was twenty-five inches, and its length about seven inches and a half. Its weight, after dislodging the blood contained, was three pounds eleven ounces.

ANCHYLOSIS OF THE SCAPULA AND HUMERUS.

By the Same.

I HAVE forwarded to you a specimen of ankylosis, and am extremely sorry I can add to it only an imperfect history of the case, as I did not attend it myself, and the owner of the animal was very reluctant to give me the particulars I required, thinking, probably, that the professional abilities of the parties attending it would not appear altogether as they would like.

The animal in question was the property of Mr. T. B. Dixon, of Rossthwaite. From the facts I have gleaned, I find the animal was nearly thorough-bred, and foaled in May, 1854. After being weaned, he was turned out; and when about six months old, was found one morning to be excessively lame of the near fore extremity, and totally incapable of placing his foot on the ground. Advice was sought from one of those clever gentry who happen to have the wonderful acquirement of knowing everything, and who generally wind up the affair with the astounding fact, that their stock of wisdom is very limited. Of course, after a very careful examination (as is generally the case when the seat of lameness cannot accurately be ascertained), the colt was pronounced lame in the shoulder, which piece of good fortune happened to be verified. A lotion was applied, but that not possessing the wonderful power of reducing a dislocation, a blister was resorted to, and repeated with no better effect. In the course of six months, an abscess presented itself on the shoulder, about three inches from the upper part of the scapula, and extending about seven inches towards the lower part of the bone. The abscess was repeatedly scarified, the owner being assured that time and perseverance would bring about a favorable result. The poor animal was thus allowed to endure a miserable state of existence till the month of May, 1856, when the owner, tired of seeing him in so deplorable a condition, sent him to the kennels to be destroyed, a distance of three miles, which distance he performed on three legs. The master of the hounds invited me to see him. At first sight I perceived a dislocated scapula to exist, and ankylosis of that bone and the humerus. The colt was standing on three legs; the diseased limb hanging in an oblique direction, the toe of the near fore foot being immediately behind the heel of the off fore. The foot of the diseased limb was much contracted,

and the muscles of the arm and shoulder diminished, while on the shoulder were ample marks of previous treatment. On the animal being made to move, the affected limb moved only from the knee, and that in a half circular direction, bringing it again in the position observed whilst standing.

PURGATIVES AND CLYSTERS IN THE TREATMENT OF SPASMODIC COLIC IN THE HORSE.

By G. ARMATAGE, V.S., Sheffield.

Nos. 338 and 340 of the *Veterinarian* for February and April, 1856, open with an elaborate article by Mr. Joseph Gamgee, M.R.C.V.S., upon the above subject; and from the character of the instances adduced, he brings positive proof of the absurdity of the present system of their wholesale administration.

Judging from the silence of the members of our profession which has followed so valuable a production, I am inclined to believe in a great measure that "*Truth has been drawn in its fairest lines,*" and is, therefore, too palpable to be opposed.

I would gladly have perused a communication from others "older in the service than myself," rather than attempt to write, but being persuaded that the object is a laudable one, and we cannot well use it threadbare, I am induced to do so, although far be it from me to take up one system on account of its novelty, or to stigmatise another, because I think well to discontinue it.

Mr. Gamgee very justly observes: "How often is the veterinarian puzzled as to whether it is a simple case of colic he is attending, or if inflammation has set in?" Hence the prescription of oil in lieu of aloes, and the admixture of other ingredients of a narcotic nature.

I believe we are too much concerned about the temporary pain the animal evinces than we are respecting a removal of the cause of it, and in this humane delay we are surprised at the sudden departure of our patient.

The fear of inflammation also seems to be a means of prevention in the use of purgatives alone for the cure of colic; and the *Veterinarian* does not lack of communications in which we are assured of the unfortunate results attendant upon giving a dose of physic without any *preparation*.

Now in equal fairness, if we allow that various impressions are propagated through the entire length of the alimentary

canal; such, for instance, as those attendant upon the use of a clyster, which is so well known as an efficient agent in the expulsion of fæcal matter, we must also allow that the same influences will promote the extension of disorder and inflammation arising from a mass of indigestible matter, and so account for that of which the medicine may be innocent.

What an array of spectral victims to our (*Toxicological*) treatment would present themselves to our imagination, were we to consider the nature of the different ingredients which together form our *model colic draught*; the whole pharmacy being scoured repeatedly for agents, for the *relief* of the suffering animals.

“*Remove the cause*” is a well-known admonition, and, “*the effects will cease*” is an inductive inference; the feasibility and productiveness of which are in no wise so apparent as in cases of bowel complaints, not only in the horse, but in cattle. And I feel quite confident in asserting that a simple dose of purgative medicine has in my hands saved the life of many valuable animals of both classes, which, otherwise, would have fallen *victims* to all the consequences of morbid suspension of digestion, and perverted nervous influence.

Another point of doubt to be raised respecting the treatment of bowel complaints by means of purgatives, and one which appears to carry weight, is, when our patient happens to be a pregnant animal.

In such cases we are led to suppose our treatment must be necessarily limited, and that purgation would destroy the attachments of the placental membranes, abortion of course following; thus pointing out a remedy, *that of quieting the system*, and deceiving nature by the use of purgatives, of which she cannot be sensitive.

From the observations made on patients of this kind, I am sure, that when a premature birth takes place, it is not on account of a *proper* dose of purgative medicine having been given, but from the *violent acts of the animal*; a breach not uncommonly having been made before our arrival.

The fact of our patients being placed in a horizontal position, and thus in a great measure facilitating the retention of *indigestible matter especially*, I think, clearly indicates the treatment of bowel complaints by purgatives alone; and the more so when we admit that whatever may be assigned as the *cause*, whether it be a draught of cold water, or a sudden chill, &c., that such agents are only coadjutors in the production of a morbid influence and perverted secretion—states which may be accelerated, but, in reality, depend upon an improper quality or quantity of food; a proper solution of

which the functions of the stomach or intestines are inadequate to.

Grave, indeed, must be the character of the disease when constipation exists to the extent of three, four, or even more days, as we are sometimes assured; but I hope for the good of our patients, and our own name, we are on the right scent, and will at length bring down our pet, with all its honours, to the place most properly assigned for all such causes of blighted hopes and cheerless prospects.

Having for some time followed the treatment of colic with purgatives, according to the plan laid down by Mr. Gamgee, I was not a little pleased to find I was not the only one who held this *singular* opinion; but after all the *cold water* with which my arguments have been met, it has afforded the happiest results; and were it only for the saving of *time* to the veterinary attendant, and of course obviating the necessity of watching through the night (which one enthusiastic and anxious in his profession will do), he must be amply repaid, to say nought of the valuable echo which resounds from the satisfaction of an agreeably surprised client.

I have an occasional awkward case of colic, in which a great amount of ambiguity exists, dependent upon more or less pulmonary derangement, and a consequent loss of nervous power. Such cases, on mature consideration, generally afford ample justification in abandoning a line of treatment which has an *apparent* tendency to an aggravation of symptoms, the low character of which are most likely to carry off the animal.

In such cases it is well to give only a *medium* dose of aloes, use injections more frequently, and rouse up the vital forces by a moderate dose of the Spir. Ammon. Aromat.; for I find that in these cases the suspension does not arise from a great quantity of food so generally as it does upon that of a kind either inferior or of a richer character to that commonly used, there being great prostration of strength, and a low typhoid fever present.

I have not yet alluded to clysters, of which we have as many sufficiently to be condemned as the varieties of medicine to which they are intended as an adjunct. Sufficient for the present, that I believe they are far from being used as properly, or as frequently, as their properties entitle them to our consideration; but after what Mr. Gamgee has said (page 8, No. 337, January, 1856), it would ill become me to add further to it.

Reverting to the subject of aloes, and the decided results attendant upon their use in colic, I could add largely in con-

firmation of what has been said ; but after the positive character of the cases brought forward by him, the experience he has so long enjoyed in the prosecution of his plan of treatment, and the successful issues of which he assures us, such would only amount to a needless repetition. I may, however, be allowed to state, in conclusion, that from my own experience in the matter, I find the greatest nicety to exist in the symptomatology, which does Mr. Gamgee very great credit, and he richly deserves our best thanks for his highly interesting papers.

I cannot divest myself of the thought, that the treatment of colic has been greatly disregarded, and our want of attention much to be condemned ; however, as " 'tis never too late to mend," I hope we have at length arrived at a commencement.

OPEN STIFLE JOINT IN A FILLY.

By W. E. Cox, Student of Veterinary Medicine, Ashbourne.

WE were called in, during the Christmas vacation, to attend a filly, the property of Mr. Wright, of Tissington, which was said to have bruised or injured its leg in front of the stifle. When we arrived we found a punctured wound, as if made with a hay-fork, situated immediately where the patella articulates with the tibia, and a discharge from it of a straw-coloured viscid fluid. Having caught a few drops of the fluid, and added a little nitric acid, which formed with it a coagulum, our *diagnosis* could only be that it was a case of open-joint with synovial discharge. *Prognosis* uncertain. The part being much tumefied, we immediately ordered cooling applications to be applied to the limb, directing, at the same time, that the filly be kept quiet, and resorted to the antiphlogistic treatment. We visited our patient on the second day, and found the synovia escaping more freely. We now commenced our treatment of the wound by ordering first the application of a styptic, and afterwards a traumatic, then giving pressure by the hand ; relays of men being had for eight successive days. Fever and laxative medicines were administered as found necessary, and the patient kept in a standing position. This treatment was continued for several

days, when granulations were observed to be gradually extending over the wound, and in a short time it became completely healed. The animal is now in a fit state for work.

LACERATION OF THE GASTROCNEMII MUSCLES AT THEIR ORIGIN.

By the Same.

A FEW days since we were requested to attend a foal, the property of a person some distance from this town, which had been foaled the same day. On arriving at the place, and examining the foal, one of his legs was found extended under the body, the hock almost touching the ground. On inquiry it was ascertained that the foal was foaled with the hind-leg extended under the abdomen, and it "stuck at the hips" for a long time, resisting all attempts at extraction. At last it was pulled away by main force. The prognosis in this case was decidedly unfavorable; but as the owner wished it, a boot was employed, made of leather and lined with wool, but in a few days the foal died, when it was found that our diagnosis was correct,—the gastrocnemii muscles were torn from their origin, and had become black and mortified.

PAST AND PRESENT—TREATMENT OF FISTULA.

By "ACTEON."

IT matters not what grade of life a man may be in, the words "past and present" must naturally be very impressive to him, and bring reminiscences, pleasant or otherwise, vividly to his mind. It is even so with the veterinary surgeon when he looks back to the days spent in the nursery of his profession, and when only in the long clothes of his veterinary knowledge, he remembers the anxiety then evinced for the time to come for his running alone in his acquired power, probably determined as he was to outstrip all competitors in proficiency. But, alas! what a check he received, when he found he had nothing but his own strength to rely upon when brought into the presence of his first patient; whose owner, perhaps, was a man well-versed in horse usages. What were the

feelings of those who have, since such occurrences, established a name for themselves? It would, indeed, be a study; more especially for those anticipating the right to subscribe V.S. to their names, if the thoughts of all the members of the art, under such trying circumstances, were chronicled.

These comments, I hope, will impress on the student's mind the really short time he has to acquire that knowledge so essential in buffeting the world in his professional capacity; and warn him of the very many variations he must adopt in his future practice to combat disease successfully. This variation of treatment, probably a departure from all the prescribed rules of the college, he will often find necessary; and this is the time too that he tests the truth of his acquired theory; and he is lucky indeed who can pass through the ordeal without wishing for a helping hand.

The foregoing were somewhat my thoughts, when I met with some of the worst cases of fistula I ever saw, and had occasion to be very severe in the treatment of them. Many years ago, I had recourse to the usual routine of dressing these lesions in the authorised way, but not with the anticipated result. As a last resort, in a case of fistula of the withers, I used the knife most unmercifully, removing about three pounds of organized fibrine, afterwards applying the hot iron to the indolent parts; repeating the cautery about every fourth day, and dressing the wound in the intermediate days with digestives. It was certainly astonishing how quickly the parts healed thus treated. The iron has now usurped all other modes of cure in such cases; and even in quittor I have found it particularly efficacious, applying it on every appearance of an unhealthy discharge. The probe will denote the improvement that is taking place, and also the depth of the sinuses. The wound must always be cleansed by injecting water into it prior to the application of the iron, which will be required about every third day. On the subsequent days an injection of a solution of the acetate of zinc, twice in the twenty-four hours, will be found beneficial, first cleansing the sinuses with warm water. I have found this mode of treatment answer all my expectations. The iron at the first may be applied pretty freely, but afterwards more cautiously.

Facts and Observations.

ANALYSIS OF THE ESCULENT SEEDS USED AS FOOD FOR THE HORSE, &c.

By M. POGGIALE.

EXTRACTED from an article by him, "On the Chemical Composition and Nutritive Equivalents of the Food of Man."

	OATS.	BEANS.	LENTILS.	PEAS.	BARLEY.	MAIZE.
Nitrogenous Matter .	11,254	24,210	29,055	21,775	10,655	9,905
Starch and Dextrine .	61,850	44,156	43,956	50,820	60,330	64,535
Fatty Matters . . .	6,108	1,418	1,484	5,320	2,384	6,680
Lignine	3,460	12,631	7,738	4,175	8,779	3,968
Saline Substances . .	3,085	3,565	2,365	2,730	2,623	1,440
Water.	14,243	14,020	15,402	15,180	15,229	13,472
Total	100,000	100,000	100,000	100,000	100,000	100,000

—*Journal de Pharmacie et de Chimie, and the Chemist.*

TEST FOR GRAPE SUGAR.

PROFESSOR BOTTGER states, that when a liquid containing grape sugar is mixed with carbonate of soda and some basic nitrate of bismuth, and then boiled, the presence of sugar, even in very minute quantity, is indicated by the grey coloration or blackening of the suspended bismuth salt, which is reduced either to suboxide or to metal. He states, also, that none of the other constituents of urine give rise to this reduction, and consequently recommends this test as preferable to Trommer's test for the examination of urine. Cane sugar does not produce reduction of the bismuth salt like grape sugar, so that the presence of grape sugar mixed with cane sugar may be detected by this test.—*Pharmaceutical Journal.*

PRODUCTION OF SULPHURIC ACID FROM GYPSUM.

HR. KOHSEL has devised a method of obtaining sulphuric acid, which consists in converting gypsum into sulphide of calcium by igniting it with carbon in cylinders, then exposing the sulphide mixed with water, to the action of carbonic acid gas at a moderate temperature, burning the sulphuretted hydrogen thus produced, and afterwards treating the sulphurous acid and water vapour in the ordinary way in lead chambers. The carbonic acid gas generated in the first stage of the process is used for decomposing the sulphide of calcium of a subsequent charge, and the waste heat of the igniting furnace is made available for producing the requisite temperature for this decomposition.—*Pharmaceutical Journal*.

COLLODION AS AN ESCHAROTIC.

DR. MACKE states, in the *Medicinische Cent. Zeitung*, that he has used with advantage an escharotic composed of one ounce of collodion to one drachm of corrosive sublimate. He has used it principally in nævi, and small excrescences which patients wished to get rid of without the use of the knife. It is applied with a camel's-hair pencil, dries rapidly, and cannot be rubbed off easily. Applications of cold water may be made in cases where the inflammation runs high, without interfering with the action of the caustic. The eschar is thin, and falls off after three or mostly six days; pain is very slight, and the author has not found that any absorption of the bichloride takes place.—*The Lancet*.

THE BEST WAY OF WITNESSING THE CIRCULATION OF THE BLOOD.

DR. WAGNER, of Gottingen, advises, for this purpose, the use of animals narcotized by chloroform, whose mesenteric capillary vessels only allow of the passage of one row of blood-globules. The rapidity of motion can, under such circumstances, be easily ascertained.—*The Lancet*.

TREATMENT OF ITCH AND MANGE.

A MIXTURE of soft soap and common salt, in the proportion of eight ounces of the former to four ounces of the latter, has been successful resorted to by Dr. Schubert, both in hospital and private practice, for itch. The two are dissolved in a quart of warm water, and the solution applied night and morning, for three or four days. The skin is afterwards well cleansed in a bath of soap and water.—*Medicin. Zeitung.*

[As true Mange has its cause in the existence of a parasite, in common with itch, the above remedy may, perhaps, be found available for the lower animals; especially in mild attacks.]

Extracts from British and Foreign Journals.

POISONING OF SHEEP-DOGS WITH STRYCHNINE.

By STEVENSON MACADAM, Ph. D., F.R.S.E.

FOR some time back the tenants on the Kinnoull estates, in the neighbourhood of Perth, have suffered severely from the loss of their well-trained sheep-dogs, which were supposed to be destroyed by poison. At the latter end of February the farmers and others interested in the matter, held a public meeting in Perth, and passed a series of resolutions which involved immediate action, with a view, if possible, of tracing the evil to its source. In the first place, it was resolved that the stomachs of the dogs which died suddenly, and the remains of the rabbits which were found lying beside them in the fields, should be placed in my hands for chemical examination, in order to ascertain if the dogs really had been poisoned. Accordingly, in the beginning of March, I received a hamper, containing, amongst other animal matter, the stomach and contents of a dog, and a considerable piece of a rabbit, part of which the dog had been observed to partake of immediately prior to its death.

The contents of the stomach consisted mainly of oatmeal porridge, accompanied by about three ounces of the muscle

of a small animal, corresponding with that of a rabbit. The process followed in this investigation was to digest part of the contents of the stomach in a dilute solution of oxalic acid for some hours, thereafter warm, and strain through muslin. The filtrate was neutralized and rendered slightly alkaline by stirring it with a rod of caustic potash. It was then placed in a narrow-mouthed bottle, several ounces of ether added, and the whole well agitated together. On settling for a short time, the ether, with the strychnine dissolved in it, floated to the surface of the liquid. The upper stratum of fluid was poured off into a porcelain evaporating basin, allowed to evaporate spontaneously to near dryness, slightly heated to remove remaining traces of the ethereal liquid, and then tested for strychnine. The indications which were deemed sufficient for the identification of strychnine were, the *taste* of the extract, and the *violet colour* produced by *bichromate of potassa* and *sulphuric acid*.

The portion of rabbit which had not been partaken of by the deceased dog was subjected to the same process, but the extracted matter was found so largely contaminated with fatty matter, that the *colour test* could not be observed, and the *taste test* was not at all satisfactory. In order to separate these fatty matters, the residue was treated with a hot dilute solution of oxalic acid, heated to near ebullition, allowed to settle, and the under liquid containing the oxalate of strychnine was drawn off by a pipette from the upper one consisting of the fused fat or oil. The water extract was then treated with potash, ether, &c., as previously mentioned, and the tests applied, when very decided indications of the presence of strychnine were obtained.

In regard to the quantity of strychnine employed in the particular instance here specially referred to, there were no attempts made to estimate directly the amount, but several circumstances appeared to me to indicate that a comparatively large dose had been partaken of by the dog. There is no doubt that a certain relation exists between the length of time an animal, after partaking of the poison, will live before it begins to show symptoms of poisoning by strychnine, or succumb to its action, and the greater or less dose which has been administered to it—the larger the dose, the quicker the fatal result; and the smaller the dose, the more tardy are the strychnine symptoms observed. There appears, also, a distinct relation between the time an animal survives a dose of strychnine, and the greater or less fulness of the stomach; for where this organ is well filled with nutriment, the poison is necessarily diffused through much harmless matter, and

the greater portion is for the time hindered from being absorbed; so that unless a large dose has been partaken of, a fatal amount may not be absorbed for hours. Now, considering that the stomach of the deceased dog was well filled with food, and that its contents were not at all in a digested condition, I am inclined to assume, that three grains of strychnine would be required to kill an animal in the presence of so much food, and in such a short time as to anticipate the digestion of the meal. This opinion is much strengthened by the fact, that the colour and taste tests were unusually distinct and decided. Granting, then, that the portion of rabbit partaken of by the dog contained three grains of strychnine, it will follow that were the whole rabbit dressed in the same way, between twenty and thirty grains of that poison was employed in preparing this one rabbit. Now, it should be distinctly observed that such a quantity of strychnine could not have been absorbed into the muscular system of the rabbit through its stomach, because experiments conducted by myself, and detailed on previous occasions, have demonstrated that the quantity of strychnine so absorbed is very minute, and that it is not present in such amount as to be poisonous. The rabbit had undoubtedly been dressed for the purpose of destroying animal life; for, independently of the large amount of strychnine, there were no stomach, intestines, head, skin, hair or claws, attached to the muscle of the rabbit, and neither were any detected in the stomach of the dog. Hence it follows that the rabbit must have been killed, divested of its skin, head, and viscera, and thereafter strychnine, in some form or other, liberally powdered over the carcase, or placed in incisions made in the muscular tissue.

Since communicating the preceding statement to the Society, I have been engaged in the examination of other cases of a similar nature which occurred in the neighbourhood of Dunse and elsewhere. Each new instance but strengthens the fact, that every now and again strychnine, either pure or as *nux vomica*, is purchased and used by the pound for the purpose of saturating the carcasses of rabbits, lambs, &c., with the avowed design of strewing these baits over land for the destruction of vermin, but which are unfortunately open to the thoughtless incursions of valuable sheep-dogs, and even human beings.—*Pharmaceutical Journal*.

SENSIBILITY OF THE PRINCIPAL REAGENTS ON STRYCHNINE.

By Dr. J. E. DE VRIJ and E. A. VAN DER BURG.

Chromate of potash, or ferridcyanide of potassium and concentrated sulphuric acid.—By these reagents $\frac{1}{30000}$ of a grain of strychnine can be detected, if one drop of a solution, containing one grain of strychnine in 60,000 grains of water, is evaporated in a small porcelain dish on a water-bath, and the remaining substance moistened with the smallest possible quantity of pure concentrated sulphuric acid. By introducing in this solution a *very small* fragment of a crystal of bichromate of potash or ferridcyanide of potassium, and moving this fragment with a glass rod in the solution, a beautiful dark purple colour is produced on every part of the surface of the porcelain that has been in contact with the acid solution, and the fragment of one of the two salts.

Bin-iodide of potassium, and iodide of mercury and potassium.—By a solution of one of these compounds, $\frac{1}{30000}$ of a grain of strychnine can be detected. These reagents, like the following, possess only the ascertained sensibility, provided the drop of liquid is contained in a capillary test-tube, in which the liquid, although only a drop, forms a small column, in which the formation of a precipitate can be observed by comparison with a similar capillary tube filled with pure water, and mixed with the reagent.

Tannic acid reveals $\frac{1}{35000}$ of a grain of strychnine.

Solution of chlorine in water, $\frac{1}{30000}$.

Sulphocyanide of potassium, $\frac{1}{30000}$.

Neutral chromate of potash, $\frac{1}{30000}$.

The precipitate formed by bin-iodide of potassium is brownish-red, and if dissolved in weak warm spirit, acidulated by sulphuric acid, beautiful crystals are formed of sulphate of iodo-strychnine, which polarize the light, as has been discovered by Mr. Herapath. The precipitate formed by iodide of mercury and potassium, by tannic acid, and by solution of chlorine in water, are white. This last reagent must be used in relatively large quantity, and the precipitate formed by it does not appear immediately.

The precipitates formed by sulphocyanide of potassium and neutral chromate of potash are both crystalline. The colour of the former is white, and the form of the crystals observed by the microscope is very characteristic. The colour of the latter is a beautiful yellow. The formation of

both these precipitates is accelerated by rubbing the surface of the tube with a glass rod.

The precipitate formed by chromate of potash gets immediately a dark purple colour, if moistened by concentrated sulphuric acid. *All* the other precipitates get the same colour if they are dissolved in a small quantity of strong sulphuric acid, and the solution brought into contact with a fragment of a crystal of chromate of potash or ferridcyanide of potassium.

ON CAUSTICS.

M. E. FERRAND, in a paper addressed to the *Société des Sciences Médicales et Naturelles* of Brussels, gives the following

List of the principal Caustics :

Ammoniacal	Cupreous
Antimoniocal	Mercurial
Silver	Acid Mercurial
Arsenic	Nitric
Gold	Potassic
Calci-potassic (of Vienna, of Filhos)	Stannic
Chloro-bromic	Sulphuric
Chromic	Zincic

After which he proceeds to group or classify and comment on them thus :

Alkaline Caustics.—*Ammoniacal, Antimoniocal, and Calci-potassic.*

In general, caustic alkalies occupy the first rank with respect to the homogeneity of the result, the second place with regard to the extent of the action produced, and the last with respect to consistence.

They have a dissolving action on the elements of the blood; they attack the *skin* powerfully, and this property is characteristic; indeed, they are used in many cases, and their application at first becomes necessary, when we intend immediately to use a metallic caustic, as these last do not break the skin.

With Muscles.—A soft, not very distinct, eschar, 3 millimetres in thickness.

Dried as far as possible in the air, the cauterized portion weighed two, when the product of an analogous cauterization weighed four with acid, and one with metallic caustics.

Acid Caustics.—*Nitric, Chloro-Nitric, Chloro-Bromic, Chromic, Sulphuric, &c.*

In general, the results which they produce occupy the first rank as regards extent, and the second for consistence; their action is essentially penetrating; their action on the elements of the blood varies; they solidify the albumen of the blood into a paste, with a greasy appearance; they coagulate the globules of the blood; hydrochloric acid destroys them, forming a gelatinous magma. They liquefy the fibrine.

They attack the skin powerfully when not deprived of epidermis, thus recalling the action of the alkaline caustics; but if the acids are not very concentrated, they wrinkle and crack it without cauterizing.

With the exposed Muscle.—A moderately firm eschar, more or less spongy; more often irregular, incomplete, and thus showing that they penetrate deeply, but not energetically. Its thickness easily becomes 3 millimetres, and we find even more deeply that it has been imbibed.

They produce abundant suppuration.

When dried, as far as possible, in the open air, the eschar weighs four, when that cauterized with alkalies weighs two, and that with metallic salts weighs one.

Metallic Caustics.—*Of Antimony, Silver, Arsenic, Gold, Mercury, Tin, Zinc, &c.*

In general, the results which they give are combinations which, among caustics, occupy the first rank as to consistence, and the last as regards extent, and even sometimes of homogeneousness.

They solidify the elements of the blood, albumen, globule, albumenose, hematine, and fibrine, and are, moreover, characterised by their easy desiccation, and the insolubility of the compound produced.

With the *skin*, the epidermis is not attacked by metallic caustics which are not dissolved in an excess of acid, or which are not decomposed in contact with it; when applied, the epidermis is only more or less wrinkled.

With the exposed Muscle.—A dry, hard eschar, generally well defined.

Whether obtained from dead or living beings, the eschar produced by metallic caustics may be preserved indefinitely, for they are imputrescible.

Acid Metallic Caustics.—Mercurial acid; or acid deuto-nitrate of mercury, and *gold caustic*, or Recamier's caustic, a solution of chloride of gold in *aqua regia*.

They present properties which show necessarily the proportion and energy of the elements which constitute them. They participate in various degrees in the properties of the caustics of the second and third classes, between which, as I have already observed, they form the connecting link. They nevertheless differ from them in various important points. They differ from the purely acid caustics, because they do not dissolve fibrine, as they do; from the neutral metallic caustics they are distinguished by the property—which the latter do not possess—of perfectly attacking the skin when quite dry, and possessing its epidermis.

Of particular Caustics.

After having given the general and characteristic properties of caustics, considered in analogous groups, we regret that our limits will not permit us to enter into the particular examination of individuals and their destructive properties: we can only mention a few.

It is necessary to have ammonia in a state of absolute concentration to have the effect of cauterizing, and even for the preparation of Goudret's vesicant pomade.

It is advisable to have a little cotton round the pastille of potassa at the moment of its application.

Lime has a great influence in the caustics of Vienna and of Filhos.

The action of monohydrated nitric acid is so rapid that there is always reason to fear hemorrhage.

It is useful to use *aqua regia* in cases of venomous bites of animals, when other means are not at hand.

Chloride of bromium will be found to possess all the qualities of an acid caustic.

In the long memoir from which this is an extract will be found the proportions of Velpeau's caustic and black caustic, and the superiority of the latter over yellow caustic.

Chloride of antimony becoming decomposed under the influence of water, it has an acid reaction, which enables this caustic to remove the epidermis.

There is a revivification of the metals of the last class, with their metallic lustre, as far as concerns gold and silver caustics, both on the dead and living body.

It is important to know that 100 grammes of urine decompose, and in some degree annihilate, on an average, three

grammes of nitrate of silver, when it is wished to produce in the bladder, by means of injection, the modifying action of this salt.

It is highly necessary to watch, by means of analyses of the urine, the consecutive effects of arsenical caustics.

Acid nitrate of mercury has many advantages, in consequence of the double energies of its constituent elements.

Finally, it is much better to employ chloride of zinc, under the form of sparadrap or seton, with regard to the homogeneity, extent, and limitation of the rapid inflammation which this caustic causes—conditions which render it the most anti-hemorrhagic and safe caustic.

On the employment of Caustics.

Various experiments, and especially those tried on fibrine and globules united in a clot, and, on the other hand, on the muscles, have proved to me how important it is to be very careful in managing caustics.

Clots are small masses with shining surfaces, formed of tender and penetrable paste; the muscles are fibrous tissues, more or less closely united, into which corrosive liquids can easily sink, and caustics are usually either liquids or very deliquescent solids, which are thus in danger of passing through the tissues, unless all necessary precautions are taken. Chloride of zinc itself, the eschar of which so perfectly retains its form, would infallibly fuse, were it not for the precautions of M. Canquoin in the preparation of his *escharotic paste*.

Numerous substances have consequently been employed as excipients; some are inert, such as asbestos; others slightly and only partially modify the composition of the caustics, as yolk of egg, flour, &c.; and in all cases, the best are those which best fulfil the conditions of forming—

1st. A sufficient soft paste to take the form of the parts.

2d. A paste of sufficient tenacity to prevent the caustic from flowing (those which soften at once flow at last).

3d. A paste sufficiently charged with corrosive matter to cauterize at one application.

For these purposes the following matters have been employed with various success: asbestos, precipitated silica, charcoal, tinder, lint, saffron, gum tragacanth, yolk of egg, and flour.—*Condensed from 'The Chemist.'*

ON TESTING FOR ANTIMONY AND ARSENIC.

By HENRY HOUGH WATSON, Esq.

OWING to the extreme facility there is in applying Reinsch's process, and the great delicacy of it in separating arsenic and antimony from organic matter containing them, it has, of late years, generally been resorted to by chemists and toxicologists, almost entirely to the neglect of Marsh's process, in investigating the numerous cases of poisoning by arsenic which have occurred; and there has been no difficulty in proving the metal deposited upon the copper to be arsenic, when the coated copper was heated in a subliming tube (the arsenic being thereby oxidized and converted into arsenious acid), and when, afterwards, the ammoniacal nitrate of silver, the ammoniacal sulphate of copper, and the sulphuretted hydrogen tests were applied; but, as till within the last year, attention had not been directed to cases of criminal poisoning by antimony, equally easy and direct means were not known of proving, by indubitable results, that a coating or deposit obtained on copper was antimony. Dr. Odling has, however, in the last volume of 'Guy's Hospital Reports,' (vol. ii, third series), described a method, discovered by him, of oxidizing and bringing into solution a deposit of antimony, in such manner that all the striking and decided characteristics of this metal can be readily and satisfactorily elicited; and perhaps every chemist, whose attention has been drawn to Dr. Odling's paper, will admire and highly appreciate his process; but, it may be questionable whether any can so completely prize it as those who have had cases of poisoning by antimony to investigate both before and since its publication. I am one of the few who have had to detect and prove the presence of absorbed antimony in the tissues in case of poisoning before and since the publication of the paper; and I feel that I cannot too freely acknowledge the superior value of the aid rendered by the process over the other more complex means I had to adopt previously. Yet, though beautifully simple and eligible, as Dr. Odling's process is, consideration of the principle on which it is founded has led me to the discovery of another method, at least equally simple, and, I think, generally, even more eligible, except, perhaps, when the deposit is so thick as to crack off the copper. But, before explaining, it may be well to contrast the position we were in up to the time when the last

volume of 'Guy's Hospital Reports' appeared, with the altered one since.

It seems that the Palmer trial was the first criminal case in which Reinsch's process had been used for separating antimony from the tissues; and in that instance Dr. Taylor heated the copper, on which he had got the antimony deposited, with nitrate of soda in a platinum crucible, thereby converting the antimony into antimoniate of soda, which he dissolved or diffused in water, acidulated with hydrochloric acid; and he then precipitated by sulphuretted hydrogen; but, instead of obtaining a precipitate of a decided orange-red colour, which is desirable, as characteristic of the pure sulphuret of antimony, he obtained one of a reddish brown colour, undoubtedly the sulphuret of antimony mixed with some sulphuret of copper; and, therefore, not so satisfactory as an orange precipitate would have been in confirmation of the results of the other tests which he applied.* Aware of this, I was induced to pursue another course in testing the antimonial deposit I obtained on copper in a case tried at the Liverpool Assizes in August last (*Regina v. M'Mullen*). And, as my proceedings in that inquiry have not been published, a somewhat detailed account of a few of the experiments may here be acceptable, more particularly as application has been made to me by several scientific inquirers for information as to the method I pursued on the occasion.

In one experiment I dissolved 7555 grains of the liver, by boiling it in diluted pure hydrochloric acid; and in the hot solution I immersed bright sheet copper, the surface of which was about twenty-two square inches. The copper was kept in the hot solution for four hours, when it was found to have acquired a comparatively thick coating of a violet lead-coloured metal. It was then washed and dried; and, on bending it, some of the coating cracked and fell off it. The quantity which thus fell off weighed a quarter of a grain. I dissolved this quarter of a grain in nitro-hydrochloric acid, and evaporated the solution to dryness; I dissolved the dry

* There was no sulphuret of copper mixed with the sulphuret of antimony. The liquid was specially tested for copper by ammonia and ferrocyanide of potassium, but there was not the least indication of the presence of that metal. The sulphuret of antimony was mixed with sulphur; its real nature was not determined by colour only, but by its solubility in hydrochloric acid, and subsequent precipitation, as white oxychloride on the addition of this acid solution to water. Hence although the admixture of sulphur is objectionable, the presence of antimony was clearly and distinctly demonstrated by the properties of the precipitate. It will be found better to use a porcelain capsule for the deflagration.—(Note by Dr. Alfred Taylor.)

residue, by the addition of hydrochloric acid, and to this hydrochloric solution water was added, which caused a bulky white precipitate—the sub-chloride of antimony; but the liquor contained some copper, which was evident from the colour of it; and, therefore, I separated the white precipitate from the liquor, and washed it well, to free it as perfectly as practicable from the liquor. I then dissolved the white precipitate by the addition of solution of tartaric acid, and passed sulphuretted hydrogen gas through the solution, whereby a precipitate of sulphuret of antimony, of a tolerably pure orange-red colour, was obtained. These several results gave full, satisfactory proof that the coating which cracked off from the copper contained antimony. I also passed sulphuretted hydrogen gas through the solution, or liquor separated from the white precipitate, and a nearly black precipitate of sulphuret of copper was obtained. This sulphuret of copper appeared to be nearly as much as the orange sulphuret of antimony; from which I concluded that only about one-half of the quarter of a grain of the coating might be antimony; but the quarter of a grain was only about one-half of the coating on the whole of the twenty-two inches of copper.

After the twenty-two inches of copper had been removed from the solution of the 7555 grains of liver, I immersed three other pieces of copper in the same hot solution, consecutively, for four hours. In each instance I got a coating upon the copper, strong upon the first of the three pieces, and weak upon the last. From their appearance, I concluded that there could not be less than another quarter of a grain of antimony deposited on them; and I believed that from the whole of the 7555 grains of liver I had separated half a grain of antimony, making the total in the whole liver (which weighed four pounds) about 1.85 grains, equal to rather more than 4.9 grains—say to 5 grains—of tartar emetic.

The orange sulphuret of antimony, obtained as mentioned, was dried, and then dissolved by heating it in strong hydrochloric acid. I introduced the solution, along with diluted sulphuric acid and zinc, into Marsh's apparatus; and the flame of the gas produced gave deposits of metallic antimony upon a Wedgewood's ware pestle applied to it; which deposits did not dissolve with strong solution of chloride of lime.

In another experiment, in a solution of about one-eighth of the whole liver in diluted hydrochloric acid, I immersed a piece of pure zinc (after having further diluted the solution with water so much as to make it act but feebly on the zinc), and kept it in the solution for four days, at the expiration of

which time it had acquired a dark-coloured or soot-like coating of or containing antimony; for, when the zinc so coated was put into Marsh's apparatus with pure diluted sulphuric acid, the gas produced gave deposits of metallic antimony, not soluble by the application of chloride of lime. The result of this experiment was a valuable corroboration of the results, indicative of antimony from the other experiments.

Dr. Odling's process, published since the trial of M'Mullen, consists in first boiling the coated copper in solution of permanganate of potash with a little excess of potash for a few minutes, by which the antimony becomes oxidized, and the oxide is dissolved by the excess of alkali; then filtering the solution, slightly acidulating it, and passing sulphuretted hydrogen gas through it; the truly characteristic orange red precipitate being thereby produced, which may be collected and further tested in the usual manner. It will be perceived how much more directly the orange precipitate is obtained by this process than by that I had to adopt in M'Mullen's case. As Dr. Odling remarks, one ebullition, one filtration, and one reaction, are all that are required for the complete identification of the antimonial deposit; that is, so far as it can be identified merely by the orange-red precipitate. But, as it is, of course, requisite to test the purity of the potash and of the permanganate of potash used, so as to see that they do not contain antimony, it occurred to me that an advantage would be gained if one of these ingredients could be dispensed with, if the antimony could be oxidized, and the oxide dissolved in solution of potash, without the aid of permanganate of potash or any other salt. Accordingly, I introduced some copper having antimony deposited upon it into a subliming or reduction tube, and then heated to redness that part of the tube where the copper was; the usual white amorphous oxide was formed and deposited in the tube. I then took the copper out of the tube, and poured in a very dilute solution of caustic potash. On boiling this solution of potash, the oxide soon became dissolved. I then filtered the solution, acidulated it with pure hydrochloric acid, and passed sulphuretted hydrogen gas, obtaining the true orange red precipitate of sulphuret of antimony. I have repeated the experiment many times with the same success; and I have further found that, when copper, having a mixture of antimony and arsenic deposited upon it, is similarly heated in the subliming tube, it is easy to prove the presence of both metals in the sublimate formed; for instance, distilled water boiled in the tube, repeatedly, dissolves the arsenious acid from the oxide of antimony, arsenious acid being discoverable in the solution by the

ammoniacal nitrate of silver, the ammoniacal sulphate of copper, and sulphuretted hydrogen; and then dilute solution of potash boiled in the tube dissolves the remaining oxide of antimony, the presence of it in the potash solution being discoverable by the orange red precipitate again resulting after filtering, acidulating, and passing sulphuretted hydrogen.

Thus far my object was attained, to the extent of being able to abandon the use of the permanganate, without substituting any other oxidizing salt; but it will be observed that I had to make two heating operations—one, the heating of the dry coated copper, and the other, the boiling to dissolve the oxide in the alkaline solution. Though two heating operations are not particularly objectionable, yet I felt desirous of obviating the necessity of more than one; and a few trials showed that the object may be practicably and conveniently effected. Thus, copper coated with antimony is put into a tube, and a very dilute solution of caustic potash is added.* The solution is boiled with the copper in it; and then the tube is so inclined that the copper slips out of the solution (or it may be drawn out by a copper wire) into the part of the tube where the solution is not, and allowed to remain there for a few seconds or a minute or two; after which it is returned into the solution (kept boiling hot) for a minute or two, when it is again caused to be out of the solution and in the air in the tube for a short time. This alternate immersion of the copper in the boiling liquid and the exposure of it to the air, is frequently repeated till the colour and altered appearance of the copper inform us that the antimony has been oxidized and dissolved off it. The solution is then filtered, acidulated with pure hydrochloric acid, and subjected to the action of sulphuretted hydrogen gas, when the true orange red sulphuret of antimony precipitates, as in the other instances. By the exposure of the coated copper alternately to the hot solution and (while itself warm) to the air, the oxidation and solution of the antimony go on rather quickly; so much so, indeed, that only from a few minutes to about half an hour is required for the solution of the whole of the antimony; the length of time, between these limits, varying according to the density and quantity of antimony upon the copper.

By the exposure of copper (coated with antimony) made wet with cold solution of potash, and exposed to cold atmo-

* The coated copper must be previously well washed with water, and then a solution, 100 grain measures of which have an alkaline action equal to one third of a grain of potash, is sufficiently strong, when the copper is not thickly coated.

spheric air, a similar effect is produced; but the time required for the complete change is too long for the operation in the cold to be made available in preference to that in which heat is applied. In an experiment made in the cold, not more than half of the antimony was dissolved in thirty hours.

My attention was next turned to experimenting upon copper coated with arsenic. I exposed some alternately to the action of boiling dilute solution of potash and to air in a tube; and, as might be expected, the arsenic became oxidized, and dissolved in the solution. It, however, was not converted merely into arsenious acid, but into arsenic acid; for, after filtering the alkaline liquor, I slightly acidulated a portion of it with diluted nitric acid, and then added caustic ammonia till rather in excess; after which I evaporated to dryness, dissolved the dry residue in a few drops of water, and tested with nitrate of silver, which gave the brick red precipitate, indicative of arsenic acid. I acidulated the other portion of the alkaline liquor with hydrochloric acid, and then passed sulphuretted hydrogen gas, which did not immediately cause any yellow precipitate, but in a few hours I observed that a light yellow precipitate was slowly forming, and in twenty-four hours a considerable quantity of a bright lemon-yellow precipitate had fallen and covered the bottom of a half-ounce phial, in which I had corked the liquor up to keep in the sulphuretted hydrogen and exclude atmospheric air. The slow formation of the yellow precipitate confirmed the nitrate of silver test in showing the metal to have been converted into arsenic acid.

This fact, of the conversion into arsenic acid, can be taken advantage of in separating antimony from arsenic when both have been deposited on copper by Reinsch's process. What is required is to oxidize and dissolve the mixed deposit by the alternate action of boiling dilute solution of potash and exposure to the air in the tube, then to filter the solution, acidulate it, and pass sulphuretted hydrogen gas through it; and as soon as the orange precipitate of antimony has begun to collect itself together and settle, to take out this antimonial precipitate by filtering, setting aside the clear filtered liquor in a corked phial, whereby, in some hours, the bright yellow sulphuret of arsenic falls.

When the deposit of antimony or arsenic is so thick as to readily crack off and not adhere to the copper, I think it is preferable to pursue the method in which the two heating operations are required; or else to adopt Dr. Odling's permanganate process; for if the deposit falls off the copper in scales or films when in the alkaline liquor, I do not find it

practicable to pass the scales or films alternately out of and into the liquor as required. It, however, generally happens that in those instances when the greater part of the deposit does fall off, still a sufficient quantity adheres to the copper to allow some of it to be dissolved, and its character proved.

In a case of poisoning which I have had to attend to since the commencement of this year, I have submitted copper coated by Reinsch's process (in the examination of various portions of viscera), to the action of permanganate of potash, &c., as directed by Dr. Odling's discovery; and I have also submitted other portions of copper, coated at the same time from the same viscera, to the several other methods of oxidizing and dissolving the coating in potash solution herein described; and in each instance obtained the true orange red precipitate, proved to be the sulphuret of antimony by dissolving it in strong hydrochloric acid, and thereby producing a solution, one part of which when diluted with water gave a white precipitate soluble in solution of tartaric acid; and the other part of which when introduced into Marsh's apparatus, along with zinc and diluted acid, yielded deposits of metallic antimony, on porcelain and glass, not soluble by the addition of chloride of lime or of a mixture of chloride of lime and acetic acid.

I feel that I ought not to conclude this paper without expressing thanks to my friend Dr. Taylor, of Guy's Hospital, for the kind intimation he has made to me that, when only a small quantity of arsenic is obtained along with a relatively large quantity of antimony from viscera into which these metals have entered by absorption, a serious question arises as to whether the small quantity of arsenic may not have been accidentally introduced as an impurity in tartar emetic; saying that, within the past few years, he has met with this in so many instances that the fact is calculated to create alarm; and that a maker has informed him that arsenical sulphuric acid (the acid made from pyrites), is sometimes used in forming the sulphate employed in the manufacture of tartar emetic. This being so, there are two possible sources whence arsenic in tartar emetic may be derived,—one from the antimonial ore used, and another from the sulphuric acid. It is quite time that such general use of the impure sulphuric acid for pharmaceutical purposes should be prohibited; and I cannot but direct attention to the facts mentioned in a paper of mine, 'On detecting the presence of Arsenic,' published fifteen years ago, in the sixth volume, new series, of the 'Memoirs of the Manchester Philosophical Society,' and copied into the

'Medical Gazette' of June 17, 1842. I therein stated, that I had detected arsenic in sulphate of potash and also in alum, made, by the aid of pyrites sulphuric acid; and I suggested the probability that food might, consequently, in some instances, be contaminated with arsenic, as alum is often used by bakers in the making of bread; remarking, also, that vinegar is often adulterated with sulphuric acid.—*Medical Times and Gazette.*

THE URARI, OR ARROW-POISON OF THE INDIANS OF
GUIANA.

By Sir ROBERT H. SCHOMBURGK, Ph.D.

(Continued from p. 409.)

FROM what I learned from the Macusis and Wapisianas, during my first expedition, they use the bark of the woody parts of the *Strychnos toxifera* and its alburnum, both of which are considered to possess the poisonous principle in the highest degree. Young shoots are not employed for that purpose. The bark, after having been stripped from the wood, is pounded and steeped in water, to which effect a new earthen vessel is employed. Here they allow it to remain for some days, well covered, until the water is of a yellowish colour, when it is filtered by means of a simple mechanical operation. Several other plants have been meanwhile procured, of which infusions are made in a similar manner, which are added to the urari at the moment it has been concentrated on a slow fire to the consistency of a thin syrup. The addition of the juices obtained from the other plants gives a darker colour and greater consistence to the urari, which, while still fluid, resembles thick tar. It is now put into small calabashes, which are covered with leaves, to prevent the poison from coming in contact with the air. If it is to be used, the quantity required is put into a calabash, and a little juice of the cassava is added, to render it more pliable. I was told that the addition of cassava-water, as the expressed juice of the root of the *Jatrophia manihot* is termed, reawakens the slumbering powers of the poison, should it have lost its strength by age. After this juice has been added to it, the Indian buries the calabash with the poison for a day or two under the ground.

This is the simple account of the preparation of the urari,

as practised by the Macusis and Wapisianas. There is no danger whatever in the preparation, and the vapours which are disengaged are entirely innocuous. But in the same manner as the charlatan and empiric surrounds his sovereign cure against all evils flesh is the heir of with mystery, thus the Indian, for his advantage, surrounds the preparation of this deadly poison with superstitious customs. The circumstance that it requires several days to watch the pot closely on the fire, taking off the scum before it is properly concentrated, prevents the Indian, with his natural indolence, from preparing the poison more than once or twice a year.

During my third expedition, in 1837, while at Pirara, the Macusi village, which, as already observed, is the classical soil of Raleigh's and Keymis's *El Dorado*, I ascertained that an Indian lived in the vicinity who was far-famed for the preparation of the urari poison; and having won him by a handsome present, he promised to prepare it in my presence. I accompanied him myself to the Canuku mountains, a journey of two days, to be present, for surety sake, at the gathering of the plant, the *Strychnos toxifera*, the bark of which was stripped, and preserved in small baskets, made for that purpose. I took possession, as my share, of three of these baskets, which I carried with me to Pirara, but when the appointed day for commencing the preparation had arrived, the Macusi, prevailed upon by one of the chiefs of his tribe, refused to comply with his promise. I was then so near my departure for Fort San Joaquim, on the Rio Branco, that I was prevented from engaging a more willing concocter, and with the pure bark, gathered in my presence, in my possession, I left for my destination. It was during my stay at that fort that I resolved to make some experiments *how far the pure bark of the urari plant (Strychnos toxifera), unmixed with any other substance, might prove fatal to animal life*. I took, therefore, two pounds of the bark shavings, pounded them, and having poured a gallon of water on the mass, allowed it to remain in that state for twenty-four hours. Half of it was filtered off, and keeping a steady but gentle coal fire, it was boiled in a new pot, adding from time to time more of the infusion. After having concentrated it by boiling to the consistence of very thin syrup, and having allowed it to cool, two arrows were poisoned with this substance, with which two fowls were slightly wounded, one in the thigh, and the other in the neck. The effects became apparent after five minutes—the first died in twenty-seven minutes after the wound had been inflicted, and the other, which had been wounded in the neck, after twenty-eight.

The gentlemen who accompanied me on my expedition, and Senhor Pedro Ayres, a scientific person who had been sent by the commander of the district to welcome me at the Brazilian boundary, were present during these experiments, which established beyond doubt *that the pure concentrated juice of the urari plant alone, without any assistance of Indian charlatanism or the addition of extraneous substances, proves fatal to animal life, if its juice, thus concentrated, be brought in contact with the blood.*

The boiling process was finished in less than seven hours, while the Indians employ more than forty-eight hours for that purpose; and as it required a period rather longer to produce death in the fowls wounded with it than would have been necessary with good urari, this must be ascribed to my decoction not being sufficiently concentrated. The poison which I had thus prepared, was of a yellow-brownish colour,—good Macusi poison is greenish-black, or even jet black; and I have no doubt that it receives this appearance from one of the ingredients which the Indians add to it.

When I left Pirara, foiled in my purpose to see the poison prepared by the Macusi, I arranged with the late Rev. Thomas Youd, who laboured then as missionary of the Episcopalian church in that village, to try if he could induce this famed poison-maker to boil it in his presence, in which he fully succeeded, and he had the goodness to communicate the result to me in a letter, which is printed *in extenso* in my paper on the urari in the ‘Annals of Natural History,’ vol. vii, p. 416. It is the most authentic document of the manner in which the poison is prepared, for I have since witnessed its manufacture myself. Snakes’ teeth, stinging ants, or any other animal matter, are not added to the mass. The urari bark alone is the ingredient which gives the active principle, and the other additions probably the consistence and colour. The herbs, the juice of which is added to the true urari bark, were, as far as I was able to ascertain their botanical character, *Strychnos cogens*, Benth., a species of *Cissus*, a plant belonging to the family of *Xanthoxylaceæ*, but the rest I could not recognise. The *Cissus* no doubt contributes to give consistence to the concoction. It deserves the passing remark, that all the ingredients which the Macusi use (excepting the *Cissus*,) for the preparation of their poison are of an intense bitter.

The sagacity of the Macusi to try whether the poison he has prepared is of the strength he desires, by wounding a lizard, a cold-blooded animal, shows much more philosophy than as related by Father Gumilla, that an Indian wounds

himself slightly, and an arrow dipped in the poison is held near the wound. If it make the blood return to the vessels, although not brought into contact with it, the poison is considered to be of sufficient strength. The absurdity of such an experiment requires no comment; on the contrary, the experiment of the Indian is sagacious, for he believes that the urari has less effect upon cold-blooded animals than upon those with warm blood. Its effect is more or less sudden upon different animals, and the Indians say that monkeys and jaguars are more easily killed with it than any other animal. If it has a sudden effect upon a cold-blooded animal, for example, upon a lizard, a frog, or a snake, the preparation, as I have already mentioned, is considered excellent, and against such poison the Indians say there is no remedy. Salt and sugar are considered antidotes against weak poison, but will avail nothing where the poison is strong. It has been related to me, that when wounded in wars, and salt is not to be had, the Indian resorts to urine. The thirst which follows is described as almost intolerable, and certain death ensues if the thirst is quenched with water, for, the more the wounded person drinks, the greater becomes his thirst. This agrees with what Raleigh observed in this respect nearly two centuries and a half ago.

According to the researches of M. Alvaro Reynoso, chlorine and bromine neutralize the effect of the poison completely; and iodine, azotic acid, and potassa, alter it without destroying completely its effect. If this discovery be confirmed by experiments with the best Macusi poison, which I do not think M. Reynoso employed, it will be an invaluable discovery.

I have endeavoured in the preceding remarks to give a general outline of what was known of the famous arrow-poison, when I published my remarks in the 'Annals of Natural History,' establishing at that time, without contradiction, by my experiments at Fort San Joaquim, that the principle which destroys animal life by urari is derived from the *Strychnos toxifera*, and that the poison, prepared by the Macusis, which is considered the best and strongest in South America, does not contain snakes' teeth, stinging ants, or any other animal substance.

My brother, Richard Schomburgk, who accompanied me in my travels during 1840 to 1844, at the command of the King of Prussia (the Prussian Government having previously obtained the permission from Her Britannic Majesty's Government), had in 1842 the opportunity of witnessing the preparation of the poison by the same individual who

was to make it in my presence, ultimately refusing to do so, but who was more complacent to the missionary, Mr. Youd. The process, as described by my brother, is identical with that mentioned in the letter of Mr. Youd, dated the 4th of October, 1838, which I have added as a valuable document to my remarks on the urari poison in the 'Annals of Natural History.'

On his return to Berlin, he took with him some of the poison which had been prepared in his presence, which Dr. Heintz, of Berlin, has analysed.

The difficulties of this process, as regards vegetable substances, and the patience requisite to perform it with accuracy, are well known. I have given samples of the true Macusi urari to some of the first chemists of our day, but it seems all shrunk from the labour, or really found difficulties which deterred them from continuing the process. Dr. Heintz did not meet with perfect success. It is the most recent analysis of the urari poison, proving like Boussingault's the absence of strychnine and of animal substances. Dr. Heintz did not succeed in discovering the alkaloid which MM. Boussingault and Roulin have called curarine, and which MM. Pelletier and Petroz assert they have likewise obtained by a process which differs from that of the chemists just before named.

Some very valuable experiments respecting the effects of the poison were made by Dr. Virchow and Dr. Münter, a statement of which is added in a note to my brother's work.

The most important result of these experiments is the observation that animals killed by urari show no difference in the appearance of the vital organs on dissection from those which were killed by mechanical means.

With the knowledge of the foregoing facts before me, I have been rather astonished to see the old account of snakes' teeth, &c., renewed in an article, entitled "*Recherches sur le Curare*," which, according to the '*Journal de Pharmacie et de Chimie*,' (tome xix, p. 36), has been read at the *Académie des Sciences*, by M. Cl. Bernard, in his name, and in that of M. Pelouze.

These gentlemen assert, furthermore, that notwithstanding this poison had been known for such a length of time, no precise notice existed of the nature of the ingredients which entered into its composition.

I thought that the experiments which I had made at Fort San Joaquim would at least have set the question of the source of the active principle at rest.

(To be continued.)

PARLIAMENTARY INTELLIGENCE.

EXTRACTS FROM MINUTES OF EVIDENCE OF THE "SELECT COMMITTEE ON THE SHEEP, &c., CONTAGIOUS DISEASES PREVENTION BILL."

The above Bill was read in the House of Commons the second time, 5th June, 1857, and referred to a select committee, consisting of the following members:

Mr. Bentinck.	Mr. Stafford.
Mr. Gurdon.	Mr. Miles.
Mr. Colvile.	Mr. Finlay.
Mr. Caird.	Mr. Seymour Fitzgerald.
Sir Thomas Burke.	Sir John Shelley.

June 9th.—*Ordered*, that Mr. Ball and Mr. De Vere be added to the committee.

June 15th.—*Ordered*, that Lord Naas be added to the committee.

Martis, 16^o die Junii, 1857.

GEORGE W. P. BENTINCK, Esq., in the Chair.

James Beart Simonds, Esq., called in; and examined.

1. *Chairman.*—We want to ask you your opinion on various points connected with the pleuro-pneumonia disease; you are, I believe, the Veterinary Professor to the Royal Agricultural Society?—I am; and as veterinary professor to that Society, and to the Royal Veterinary College, I have had ample opportunity of being acquainted with most of the diseases to which cattle and sheep are liable.

2. State to the committee your opinion generally as to the contagious or infectious nature of pleuro-pneumonia?—The disease which is designated pleuro-pneumonia is one of doubtful contagiousness; it belongs especially to the class of affections which are designated epizootic, which term is analogous to the term epidemic in the human subject, and consequently such diseases frequently spread from the special causes in operation to produce them; they may, however, also be contagious in the ordinary acceptance of the term.

3. But is it your opinion that it spreads by contagion or infection?—I believe it frequently spreads from contagion or infection; that it spreads from that cause, as well as the

common causes which were in operation to produce it as an epizootic disease.

4. Have you had any opportunities of observing any cases in which the disorder has been introduced into this country by the importation of cattle from abroad affected with it?—I have not had any direct means of tracing infected animals into this country, and knowing how they were disposed of afterwards; but I have reason to believe that many animals infected with pleuro-pneumonia have often been introduced into this country from Holland and contiguous states.

5. And consequently that the amount of disorder in this country has been increased by those importations?—Decidedly.

6. Do you think that has arisen from any want of precaution as to the regulation of the importation of foreign cattle, or do you think the character of the disease such as to render all precaution impossible?—Pleuro-pneumonia is a disease that is scarcely recognisable in the early stages of it, and consequently an animal may be affected, and the inspector who examines the animal for the Custom House, although efficient in the performance of his duties, may fail to detect it, from the insidious nature of the disease at the time the animal may be passed; but in a few days the disease would assume a character that is unmistakeable.

7. The disease may exist, but it is impossible for the inspector to detect it at the time the beast is landed in this country?—Just so.

8. How long do you consider the disease may remain in that latent state as not to be discoverable by examination?—In this special disease a week or ten days may elapse, or longer. It is an affection that frequently goes on very slowly and very stealthily.

9. But you think that a week or ten days would always develop the disorder sufficiently, where it existed, to enable you to detect it?—Yes.

10. Then some measure of quarantine would have the effect of preventing the introduction of diseased cattle?—Yes; but, in my opinion, there are many practical objections to the establishment of a quarantine. It must be borne in mind, that animals that are sent into this country are the property of different individuals. A ship's cargo may therefore belong to five or six persons; some of those animals may have been exposed to the influence of a contagious disease, some may not. The consequence would be, that you must appoint separate places for each man's stock; because if, on the contrary, they are all put together, the

object of a quarantine being to test the soundness or freedom of animals from disease, it is evident that, on the breaking out of the infection, you expose healthy stock to it, and great mischief would be done. Besides that, the period of time the cattle are kept must be indefinite; for the diseases to which animals are liable vary in their incubation. Then, these animals must be supplied with food; and when we take all these matters into consideration, a quarantine could never be established in a country like this. I think a quarantine would absolutely amount to a prohibition of animals being sent in.

11. Do I understand you think that these difficulties will apply to cattle that have all come over in the same vessel from the same port?—Yes. On the occasion of the introduction of some smallpox sheep, an affection which excited a great deal of public attention in this country, and led, I believe, to the passing of a special Act, it was well ascertained that very many of the sheep were perfectly healthy when put on board with the diseased, and that they came from healthy districts. Those animals, consequently, were quite fit to go into a market; and if a disease does not break out while the animals are on board ship, the whole would go to market; but if you establish a quarantine, and some of the animals have been exposed to the influence of smallpox, then healthy animals would be liable to take the infection from them.

12. But would not the animal have been already liable to the infection from having been shut up so many days on board ship?—Not unless the disease had declared itself in some of them during the time they were on board ship. It is just possible, but not very probable, that such might be the case. For example, a very few hours suffice to bring over animals from Hamburg to Hull or to London, and of course importers would not put unhealthy animals on board. They believe at the time they put them on board they are in a state of health, and the period of time that these animals are usually on board may be insufficient for the disease to declare itself, because this is one of those diseases that is incubated in the system of an animal from nine to twelve days.

13. Why are you disposed to place such reliance on the disinclination of importers at Hamburg to put diseased cattle on ship board?—For this reason, that when they arrived in London those animals would be seized by the inspector, and would not be allowed to go into the dead-meat market at all, and there would be a direct loss on animals of that description.

14. *Lord Naas*.—What are the duties at present performed in the port of London in regard to the inspection of foreign cattle?—I believe they consist chiefly of an examination of the cattle by the inspector appointed by the Board of Customs, and that the Board of Customs has power to detain a cargo of animals for any length of time it may see fit, according to the report of the inspector.

15. Who are the inspectors?—Veterinary surgeons.

16. Do you know whether those duties are sufficiently performed or not?—I have reason to believe they are efficiently performed.

17. Is there an active and constant inspection of all foreign cattle that come to the port of London?—There is.

18. *Mr. Ball*.—An inspection of all animals that come in?—Yes.

19. *Lord Naas*.—Do you know that of your own knowledge?—From my own knowledge in part; that is, I have frequently been down to the docks and seen the cattle, and I have often been called in to cases which the inspectors had put aside, to determine if they were fitting animals to send into the market or not.

20. *Mr. Colville*.—Does that apply to Irish animals?—I believe there is not any such regulation as to Irish animals.

21. *Sir Thomas Burke*.—Or to Scotch animals?—I think not.

22. Then it only applies to foreign cattle?—Only to foreign cattle.

23. *Mr. Caird*.—Might not animals in which the disease has not manifested itself be slaughtered and be fit for food, which, if placed in quarantine, would become unsound and unfit for food?—Certainly.

24. *Mr. Stafford*.—Do you think the legislation on this subject is sufficient, or that more is desired?—I think more is desired; I think that many diseases which are not included in the present Act of Parliament should be included in the new Act; and I think that some clause should be inserted regulating the disposal of the cattle after they have arrived in England.

25. *Lord Naas*.—Do you allude to home or to foreign cattle?—To foreign cattle.

26. *Mr. Gurdon*.—Not to Scotch and Irish?—No.

27. *Lord Naas*.—Do you think that any further legislation is desired as to the cattle of our own country?—Yes.

28. What sort of legislation?—I think that means should be taken to prevent the extension of diseases that exist now in this country, such as pleuro-pneumonia and eczema among

cattle—the mouth and foot disease; I would also include others.

29. What precautions do you think you could take?—Similar to those that apply to the smallpox in sheep.

30. What are they?—The infliction of a penalty of £20 in the event of these animals being depastured on open land, or being sent to market and exposed for sale; in fact, if sold in any way.

31. Have you read the provisions of this Bill?—I have.

32. Do you approve of them?—I approve of them as far as they go; but I think it necessary that the Bill should be extended in many important particulars.

33. *Chairman*.—You see nothing objectionable in the clauses of the Bill as far as it goes?—Nothing objectionable. It is necessary to add other diseases to those that are named. I think that in legislating in a matter of this kind, we should have special diseases named, rather than use such indefinite terms as “other contagious or infectious disorders.”

34. You would specify every disease to which the Act applied, and include none except those named?—I would specify all those, and leave in the words “other infectious and contagious diseases.” I do not see any objection to those words, taken in conjunction with others.

35. You would make it more explicit by introducing the names of other disorders?—I would.

36. *Mr. Ball*.—What are they?—After glanders, I would introduce farcy, being a disease to which horses are very liable, equally infectious with glanders, and perhaps identical with it, as is shown by the fact that if you take the matter of farcy, and inoculate a healthy horse, it is more than probable that you will produce in the animal glanders; and if you take the matter of glanders from a horse, and inoculate another horse, it is just possible you may produce farcy. I mention this to show the identity that exists between these two diseases, and consequently the necessity of embracing farcy with glanders.

37. *Lord Naas*.—Are you aware that there is at present in existence an Act as to glanders?—I am aware that a few years after the passing of the Sheep and Cattle Contagion Bill glanders was introduced by a separate clause.

38. And any person bringing a glandered horse into a market for sale, or turning a glandered horse into a public pasture, should be fined a sum not exceeding £20; do not you think that is sufficient?—I would add farcy to glanders.

39. Is all farcy contagious?—The term “farcy,” like many

others used in veterinary practice, is badly employed; there are many diseases commonly called farcy in the country that are not farcy.

40. Suppose you were to extend these provisions to a farcied animal, who would you get to decide whether the disease was what you called farcy, or what the people in the country called farcy?—I think there should be some provision made in the Bill for the inspection of animals by veterinary surgeons under certain circumstances. It appears to me that one great defect in the present Bill is, the fact that there is no machinery in operation by which we can ascertain the whereabouts of disease, presuming it is necessary to proclaim a district, because, say smallpox is in the sheep, we know nothing of the district that may be so affected only by hearsay; the government has no means of acquiring information on that important point.

41. You mean to say that with regard to pleuro-pneumonia you propose to proclaim a district in which pleuro-pneumonia was known to exist, and so establish a sort of quarantine with regard to that district, and that you would prevent all animals going from that district into another?—I would deal in that manner with every contagious and infectious disease to which cattle and sheep are liable.

42. Including pleuro-pneumonia?—Yes.

43. What amount of pleuro-pneumonia in a farm would justify the establishment of such a system as that?—I think the law should be made to apply to a single case.

44. How far do you think the district ought to extend round that single case?—Just that one single spot, that one farm.

45. Would you confine it to the farm, the field, the parish, or the town land?—To that farm. You have a clause in operation in the present Act that no individual shall depasture any animal infected with or labouring under any contagious or infectious disorder on or upon any forest, and so on.

46. Would you place all animals in the farm under quarantine, or only this particular animal?—No; but I should legislate for their disposal afterwards.

(To be continued.)

Review.

— — —
Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.
— — —

The Constitution of the Animal Creation, expressed in Structural Appendages, as Hair, Horns, Tusks, and Fat. By G. CALVERT HOLLAND, M.D., &c.: London, John Churchill, 1857.

WE neglected to acknowledge the receipt of the above work last month. This has induced us to read it more attentively, and having done so, we give to it our hearty approval. There are in it many interesting facts expressed in correct and appropriate language, and much that is suggestive. We are friends to the popularizing of science. We would not have it enveloped in mystery, nor environed with that which would render it unattractive and formidable—a pedantic *cheveux de frise* of far-fetched and unpronounceable terms. We have no fear of its being thus rendered common or vulgar, and therefore not esteemed, since the more science is diffused, the more likely is it to become the means of increasing the power of the intellectual part of man, and enabling it to see and, in some measure, to comprehend, the wisdom and design existent in all the Creator's works, even the minutest :

“As full as perfect in vile man that mourns,
As the rapt seraph that adores and burns.”

“If mankind would diligently investigate the works of creation—look deeper into causes and effects—they would be more felicitous in their guesses, and far happier in the interpretation of phenomena. To understand Nature, we must weigh and analyse the diversity of her forms and operations. Their aspects and conditions, wisely and patiently examined, so far from embarrassing the inquirer from their

variety or singularity, reciprocally throw light on the field of research, and on the circumstances modifying the appearance of external attributes."

We shall make our quotations almost at random from the work before us, inasmuch as these may provoke our readers to a perusal of it for themselves. Moreover, the author informs us that, "though complete in itself, it contains only the first half of his researches concerning the supplementary organs of the animal kingdom. The other portion is equally ready for the press, but he withholds it on these grounds: if the principles advanced be true, it will scarcely be denied that they constitute an important step in physiology; but if false, the fallacies are indeed of a grave character. Afraid of multiplying the latter, he adopts this course, whether wise or not it is for others to decide, of offering this part of his undertaking, in order to elicit the sentiments of impartial and competent authorities."

At the very outset Dr. Holland expresses himself as not being insensible to the difficulties that present themselves in his undertaking. "The task," he says, "on which we enter is one of no ordinary kind. It has little in common with previous physiological investigations. We mention this not as a ground of merit, or to secure the indulgent consideration of the critic, but as an apology for the defects of which we are fully conscious. * * * * For more than thirty years we have zealously cultivated physiological pursuits, and from no other motive than a desire to arrive at truth, and, if possible, to enlarge the boundaries of a science of vital importance to humanity." He then goes on to consider the structure, uses, peculiarities, &c. of the appendages to the animal, beginning with the hair.

This, as a covering for the head, Dr. Holland does not consider as intended to protect it from external injuries, or to keep up its natural degree of heat. Were it so, he asks "Why does it, after the prime of manhood, disappear to a great extent from this particular region. It decays, and leaves a smooth polished surface, when clearly it is most urgently required for the purpose assigned to it." Nor is it

merely for ornament. "Utility, which expresses supreme wisdom, characterises all the manifestations of Omnipotent power." "Utility, and not beauty, as a mere external ornament, is stamped upon the infinite variety of Nature's works." The regions in which this appendage is most abundantly developed, in the human subject, are those distinguished by a concentration of nervous matter and excited vital actions; hence, correct views of the nervous system can alone explain the causes of the growth of hair.

"It is evident that the brain is an exceedingly active organ, the operations of which are not distinguished by any secretions like those to which we have alluded, or what falls under actual observation. It cannot be doubted, for it is a law pervading both animal and vegetable nature, that every vital process, whatever may be its office, conduces not only to a definite result essential to the well-being of the individual; but, further, is accompanied by the discharge of useless substances, the properties of which we may leave for subsequent consideration: the excretion of them is indispensable to the normal or healthy actions of the structures by which they are produced.

"We will endeavour to render our meaning clear and intelligible. The stomach, the liver, the pancreas, and the small intestines, contribute their vital resources towards the accomplishment of the digestive process. On the completion of it, matters arising from the action of these organs accumulate in the alimentary canal, useless for the purposes of nutrition, and prejudicial if retained, are expelled in the condition of fæces. It may further be observed, that every organ of the animal economy, according to its capacity, function, and activity, relieves itself of various chemical elements, the residue of vital processes, and are ultimately thrown off by the kidneys, the skin, the lungs, and the intestines.

"The regions where hair abundantly exists, as the head, face, pubis, axilla, and frequently the chest in the male, are the seat of, as well as in the vicinity of, excited vital actions; and the superfluous matters which these create have to be expelled, and a great proportion of them finds an external issue in connection with the tissues which generate them. These tissues are very differently circumstanced, from the internal organs to which we have adverted, both with respect to the character of the operations carried on in them, and the nature of the organic results to which they give rise."

As to the uses of this appendage, Dr. Bostock observes:

"One obvious use of hair, in the inferior animals, is to protect the body from external cold, but except on the head, this cannot be considered as applying to the human species; nor can we easily conceive what is its object in our economy; yet it is contrary to our ideas of the nature of things to suppose, that what is so constantly found to exist should not be formed for some useful purpose."

"Dunghlison, in his admirable work on physiology, remarks, 'It is difficult to assign a plausible use for the hair. That of the head has already engaged our attention; but the hair which appears on certain parts at the age

of puberty and not till then, and that on the chin and upper lip of the male sex only, sets our ingenuity at defiance.'

"It is also observed by Mason Good, in treating of this subject, that the 'roots or bulbs,' of hairs, 'are found over the whole surface of the body, though they only vegetate in particular parts, for which it is not easy to assign a reason.'"

The deposition of fat, is considered by our author, to be an evidence of diminished nervous energy, and accompanied with a state of the blood implying inferior vital conditions. Moreover, it is antagonistic to the vigorous growth of hair, both in man and the lower animals; these latter, having a variety of supplementary organs, originating in causes differing only in degree from those which give rise to the growth of hair in the former.

Passing over much that is interesting respecting the structure and function of the skin, we come to the "*causes of the development of particular hairy appendages in the higher classes of quadrupeds.*"

"We shall examine the growth of hair in the several regions of the horse. The supplementary structures by which he is distinguished, are familiar to every one. We may observe, previously to entering upon the task, that the facts and reasoning adduced on this occasion, will apply with equal force to analogous productions in other animals. The examples we shall bring under consideration will necessarily be few, but sufficient to illustrate and confirm the accuracy of the views brought forward.

The hair on the face and lateral parts of the neck, in the horse, does not grow to the same extent as on the general surface of the body. The movements of the animal do not affect the former in the same degree as the latter; and according to the vigour of the vital actions, in the several cutaneous regions, supposing other things to be equal, is the amount of the external appendage. We have here the manifestation of cause and effect, the latter varying in strict correspondence with the modifications of the former.

"One of the most striking and ornamental features of the horse is the mane, which is common to both sexes. It is, however, much more exuberant in the male than female, showing that, in the former, the functions of life are characterised by greater energy, from the influence of the generative system. Hence agreeably to the difference, is the amount of elements to be emitted from particular localities of the body in the condition of hair.

"The mane extends from the upper part of the head to the beginning of the shoulders, and in the entire horse grows to a great length. Why it should be confined to this limited space we shall endeavour to explain. The circumscribed development of it agrees with the anatomy of the parts and the distribution of nervous power. The dorsal and lumbar portions of the spinal marrow find an issue for their nerves, and the expenditure of their power, in three directions.

"1st. They communicate with the sympathetic in the abdomen, impart-

ing nervous energy to the whole of the viscera. 2nd. They send off large nerves to the strong muscles of the back and loins, and to the cutaneous surface. 3dly. The hind extremities derive the whole of their nerves from them. The greater part of the first dorsal nerve goes to the formation of the cervical plexus, from which nervous agency is transmitted to the fore extremities."

* * * * *

"The hair on the fetlock, like the mane springing from the neck, may possibly be regarded as a necessary appendage of the horse. Arguing on this view we might ask: if necessary, and, consequently, instrumental to some valuable purpose, how does it happen that man has the power of preventing its growth? It substantially disappears, when care and judgment are bestowed in the breeding of the animal. The race-horse, and the thorough-bred hunter, display it in its lowest degree. In them it is absent, as compared with its imposing form in the heavy dray or common draft horse, in which, from its profusion, it nearly covers the foot."

* * * * *

"The hair on the fetlock is found in greatest affluence in the heavy dray-horse. The form of the animal is well known. His large proportions in all directions are familiar to ordinary observation. The body is considerable in bulk, and the limbs are correspondingly developed. His step is slow, but indicates power. His strength is great.

"Of late years the study has been, in the breeding of this description of animals, to modify the combination of his qualities. To obtain greater compactness of bone and muscle, and to impart to them greater facility of action. In other terms, the object has been *to change the character of the nervous system.*"

Three causes are specified as producing diseases in those parts, denominated *grease, cracks, ulceration, and fungous excrescences.*

"1st. The growth of it (hair) is upon, and in the vicinity of, a large joint, and the *last* of the limb.

"2dly. The structures where it appears are extremely vascular. The blood-vessels assume in them a remarkable arrangement previous to their termination in the foot, the physiological conditions of which we shall subsequently touch upon.

"3dly. In connexion with the peculiarities mentioned, is the important fact, that the weight of the body is thrown upon the pastern joint and its contiguous structures, exciting the nervous and vascular actions natural to them; and proportionately aggravating the necessity for issues to facilitate the escape of superfluous chemical elements."

The reasons are then assigned why morbid affections present different characters in the race- and dray-horse. "In the race-horse they generally display *acute* inflammatory symptoms, soon run their course, and end fatally, if not checked by prompt and active means."

To this succeed the *causes of the development of horns in ruminating animals.* These, too, are stated to spring from

structures which are the seat of excited vital actions, and invariably in connection with a concentration of nervous matter; the operations of which create elements, that have to be expelled in the ratio of their production, the cerebral action determining the locality for the escape of them, and the issue occurs in the formation of horns. In the breeding of cattle and sheep, in order to secure a larger carcase and readier fattening qualities, causes a loss of these appendages, since the formation of fat is the disposal of matters that would, under other conditions, produce horns. This is followed by the *causes of the development of tusks in the larger quadrupeds*, and the work closes with a consideration of "*The influence of the generative system on the development of appendages in the lower animals.*"

Thus, we think we have shown that there is much in Dr. Holland's work which comes home to the veterinary surgeon, and that an attentive perusal of it will prove profitable to him. We could have easily multiplied our quotations, but we are obliged to refrain from doing so. Others may hereafter be given. All the views of our author may not be in accordance with those entertained by others on these subjects; they will consequently awaken thought, and excite philosophical inquiry, which, rightly directed, will elicit truth.

We close our review by the following extract:

"Man may err in his speculations, but it must not be forgotten that grave errors frequently lie near important truths; and that the discovery of the latter, is often due to the stirring influence of the former,—the ground they break up, and the interest they impart to objects previously unnoticed. If our own labours are of this kind, they may have the ambiguous merit expressed by the poet:

"Si non errasset, fecerat ille minus."

THE VETERINARIAN, AUGUST 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE PROCEEDINGS OF PARLIAMENT IN REFERENCE TO THE DISEASES OF CATTLE, &c.

IN our late inquiry into the existence and progress of epizootic and contagious diseases of cattle on the Continent, nothing struck us with more surprise than the severity of the measures which are adopted throughout Northern and Central Europe to prevent the extension of pleuro-pneumonia. These measures are founded on the belief that contagion is the chief, if not the only, cause of its spreading from one country to another, and the epizootic character of the affection appears to be entirely lost sight of. An opinion pretty generally prevails abroad that the disease reached England in consequence of the alteration of our tariff, and that if a high rate of duties had been continued, so as to prevent importations, our cattle would have been exempt from the malady. These opinions are also shared by some persons at home, although it has been distinctly stated, times without number, that pleuro-pneumonia had made considerable progress here before foreign cattle were admitted free of duty, and when consequently none were imported. On the Continent, where no restrictions are placed on cattle passing the frontier of a given country, so long as they are healthy and do not come from an infected district, a difficulty exists in tracing the outbreak of a disease to its true cause; but this difficulty is entirely removed by our insular position, and when we can name the exact day the foreign cattle first arrived, and likewise pretty nearly the exact day that pleuro-pneumonia broke out, we are placed on 'vantage ground in explaining a matter of this kind as compared with our continental neighbours. A knowledge of such facts is indispensable to successful legislation for the limitation of disease, and

a want of it has been attended with immense losses to many foreign countries. As an example of this, let us take the case of Holstein.

Shortly after the appearance of pleuro-pneumonia in 1842-3 in the neighbourhood of Altona, the department veterinary surgeon received instructions from the Danish government to watch the progress of the disease. No active measures, calling for any comment, were, however, had recourse to until 1845, when, the disease continuing, and being unabated in its severity, the government sent Professor Witt, of Copenhagen, to investigate its nature and consequences. Professor Witt, with the department veterinary surgeon, and a surgeon and veterinary surgeon of the adjoining town and territory of Hamburg, formed a commission of inquiry. This commission ended its labours by recommending complete sequestration of the places where the disease existed, the immediate slaughter of all infected animals, and the ultimate killing of the whole herd upon its being found that fresh cases occurred. The diseased animals were to be buried with their skins on, but these cut in such a manner as to prevent their being surreptitiously disposed of, and their bodies were to be sprinkled over with chlorinated lime. The indemnity to the proprietor was to consist of the government paying two thirds of the value of the diseased animals, and the full value of the healthy ones. Various other recommendations were made to secure the carrying into practice these extreme measures. Thus a proprietor was to be subjected to a fine for not giving notice of his cattle being affected; and he was also not to be allowed to sell any animals off his farm until the department veterinary surgeon saw fit to give him a certificate of their being in a state of health.

The government at once adopted these measures, and they have been in full force from that time to the present, whenever occasion has called for their administration. The effect is said to be, that pleuro-pneumonia has more than once totally disappeared, and its subsequent outbreak is attempted to be traced to a fresh introduction of diseased

animals. Thus the present visitation is reported to have depended entirely on 180 oxen which were bought in Hungary by two gentlemen of Hamburg, who brought them into the territory, to graze on the islands and marsh-lands of the Elbe. Shortly after their arrival, pleuro-pneumonia showed itself among them; and it is said that they affected some cows with which they were pastured, and in this way the malady was spread over the country.

Our readers will see that, under the operation of laws such as these, the people must sustain the loss of an immense amount of food, and the national exchequer suffer in its resources. After all, as pleuro-pneumonia is an epizootic disease, it is very doubtful whether the attacks are much diminished in number, or whether the successive outbreaks have in reality depended upon fresh importations of affected cattle. But, be this as it may, it is not the special object we have in view in these remarks, and we are also far from being found to justify the course which has been adopted.

Now, let us contrast with this state of things on the Continent the proceedings of our legislature. Eczema shows itself in the country, and no notice is taken of it. Pleuro-pneumonia soon follows, and the same apathy is manifested. Variola ovina quickly succeeds, and then the legislature is roused, and an Act is passed to limit the extension of the disease, and also another to provide for the inspection of foreign animals on their arrival here, and before they are brought in contact with our native breeds. These measures are found of great benefit. Cases of variola diminish in number, and in a year or two the disease subsides entirely, although, it is true, not solely on account of legislative enactments.

A new and a far more fatal disease then threatens our shores, to add to those already existing. The public mind becomes excited, and Parliament once more sees the necessity of further legislature. A Bill is prepared and brought into the House, to "amend the Acts to prevent the spreading of contagious or infectious disorders amongst sheep, cattle, and other animals," and which, recognising the great

amount of the evil, states—"Be it therefore enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows :

"1. From and after the *passing of this Act*, any person exposing or bringing or attempting to expose or bring any horse, ox, bull, cow, calf, or other horned cattle, sheep, lamb, or other animal into any market, fair, or other open or public place where animals are commonly exposed for sale, knowing such horse, ox, bull, cow, calf, or other horned cattle, sheep, lamb, or other animal to be infected with or labouring under the disease called glanders, pleuro-pneumonia, sheep-pox, or variola ovina, any or either of them, or any other contagious or infectious disorder; and any person turning out, keeping, or depasturing any horse, ox, bull, cow, calf, or other horned cattle, sheep, lamb, or other animal infected with or labouring under the said diseases, any or either of them, or any other contagious or infectious disorder, in or upon any forest, chase, wood, moor, marsh, heath, common, waste land, open field, road side, or other undivided or uninclosed land, shall, on conviction of any such offence, forfeit and pay any sum not exceeding £20; and the said Acts respectively hereinbefore recited shall continue in force and be read and construed as if this Enactment were incorporated therein, and all the provisions of the said Acts respectively with respect to the penalties and forfeitures thereby imposed, and the recovery and application thereof, shall be applicable accordingly."

This Bill, after being read a second time, is "referred to a select committee up stairs;" and the house orders "that the committee have power to send for persons, papers, and records." The committee meet and examine witnesses, professional and practical. The evidence shows throughout the necessity of something being done, even beyond what the Bill specifies; but, instead of attempting further legislation, the committee report to the house, that—

“Your committee have heard important evidence on the Bill referred to them.

“Your committee are strongly impressed with the necessity for adopting every available precaution against the spread of all infectious and contagious disorders amongst sheep, cattle, and horses, in this country; but the evidence brought before them shows the difficulty, if not the impossibility, of legislating further upon the subject, without seriously interfering with and hampering the legitimate operations of trade in these animals, and the committee are not therefore prepared to recommend to the house to proceed further with the Bill referred to them.

“With reference to the question of the spread of such disorders being increased by the importation of sheep and cattle affected with any such disorders from abroad, the committee are of opinion that the same difficulties present themselves in the way of further legislation upon that subject, as has already been adverted to in this report with reference to the home trade.

“Your committee are also of opinion that ample powers for the purposes of precaution are already vested in the executive, and they would earnestly recommend the utmost vigilance on the part of the proper authorities in dealing with a question of such vital importance to both the producers and consumers of animal food in this country.”

We may well anxiously inquire whether we are long to be left in such an unsatisfactory position as this? Is nothing of an efficient nature to be done to stem the torrent of destruction, simply because a few difficulties present themselves? Is it for this reason alone that no effort is to be made to limit the extension of destructive diseases far too long resident among us? And are there no means at command to check the progress of the most fatal malady known as attacking cattle, if so be, unfortunately, it too should show itself in this country? Further, can no middle course be found between the extreme severity of continental legislation and the “do nothing system” at home? We wait the reply. Science stands ready to assist, and sad experience calls loudly for her aid.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY COUNCIL MEETING, JULY 15, 1857.

AT the Quarterly Meeting of the Council, held July 15th, 1857—Present: The President, Messrs. Braby, Ernes, Jex, Jones, Wilkinson, Withers, Professors Simonds and Morton, and the Secretary.

J. TURNER, Esq., the President, in the Chair.

The minutes of the preceding meeting having been read and signed, letters were read from the Vice-Presidents, returning thanks for the honour of their elections.

Monographs from Mr. Bracy Clark on 'The Age of the Horse,' 'A Reformed Pharmacopœia,' and a 'Review of Mr. Youatt's work on the Horse,' and one from Mr. J. S. Gamgee on 'Medical Reform a Social Question,' were laid on the table as donations to the library from the authors, when it was moved by *Mr. Ernes*, and seconded by *Mr. Jex*, "That the thanks of the Council be given for the same." Carried.

The Registrar's report was then read; it announced eight deaths during the quarter, William Huke, of the Royal Artillery, 1838; George Godbold, of Woodbridge, 1833; William Charles Sibbald, of Biggleswade, 1841; Robert Molyneux, of Kilkenny, 1829; Jonathan Tebbott, of Great Oakley, 1829; John Morville, of Wakefield, 1823; John Phillips, India Service, 1831; and Charles Dawson, India Service, 1836.

Twenty-five members had been admitted from the London school during the same period. In allusion to the present state of the Register, it was stated, that 110 names had to be added to the list published in 1854, when it was moved by *Professor Simonds*, and seconded by *Mr. Withers*, "That an addendum to the present 'Register' be issued, giving the names of those gentlemen who have been admitted since its publication." Carried.

A Report from a General Meeting of the Committees, held June 17th, was next read, it stated "That the question of finance having been fully discussed, the meeting recommend to the Council, that it should request the veterinary members of the Board of Examiners, to forego their fees for a year or two, and that the fee of the medical members be reduced by one guinea, in order to meet the present de-

creased income of the College. The meeting also recommends the Council to place at the disposal of the Secretary the sum of £100 a year, out of which he be required to provide a messenger for the service of the College. The question raised as to the attendance of a reporter was left undecided."

It was moved by *Mr. Jones*, and seconded by *Mr. Withers*, "That the Report of the General Meeting of the Committees be received and adopted." Carried unanimously.

It was moved by *Professor Morton*, and seconded by *Professor Simonds*, "That the President and the Secretary be requested to act as a Deputation to make the announcement to the Medical Members of the Board." Carried.

It was moved by *Professor Morton*, and seconded by *Mr. Gabriel*, "That the travelling expenses of the Country Members of the Board be offered them." Carried.

It was moved by *Mr. Jones*, seconded by *Mr. Ernes*, "That the services of a Reporter be dispensed with." Carried.

It was moved by *Mr. Ernes*, and seconded by *Mr. Jex*, "That a copy of the Minutes be sent to the Editors of the *Veterinarian* for publication." Carried.

The Treasurer's quarterly balance sheet was next read; it stated, the receipts had been £205 13s. 2d., and the expenditure £113 7s. 8d., and that the balance in hand was £478 8s. 7d., when,

It was moved by *Mr. Jex*, and seconded by *Mr. Braby*, "That the quarterly balance-sheet be received." Carried.

It was moved by *Mr. Ernes*, and seconded by *Mr. Braby*, "That the Treasurer be authorised to draw cheques for the Board of Examiners, £63; current expenses, £50 7s. 8d.; petty cash account, £20." Carried.

It was moved by *Professor Simonds*, and seconded by *Mr. Withers*, "That the allowance to the Secretary be paid half yearly." Carried.

By order of the Council,
E. N. GABRIEL,
Secretary.

MISCELLANEA.

A BOY employed to look after cows on a farm at Cito-les-Mell (France), having for some time exhibited an extraordinary propensity for sucking the blood of the animals, from an incision made in their necks, has been sent to prison for two years, with a view to cure him of his monomania.

THE THREE PHYSICIANS.

THE celebrated French physician Dunmoulin, on his death-bed, when surrounded by the most distinguished citizens of Paris, who regretted the loss the profession would sustain by his death, said—

“My friends, I leave behind me three physicians much greater than myself.”

Being pressed to name them, each of the doctors supposing himself to be one of the three, he answered, “WATER, EXERCISE, and DIET.”

A “LOADED” HORSE.

AT the Marlborough Street Police Court, lately, a cab-driver, accompanied by a countryman from Hoddesdon, complained to Mr. Bingham that his country friend had been taken in by some dealers, who had sold him a horse. His friend had gone to the Repository, St. Martin’s Lane, to see if anything would suit him. He could not find anything inside the place, but outside he was met by a horse-coper, who managed to persuade him to buy an animal for £8 10s. When he got the horse home, he found it was only fit for the knackers; for though outwardly good looking enough, it was broken winded and had no inside, although warranted sound.

Mr. Bingham said he supposed the animal was warranted sound, wind and limb, quiet to ride or drive in single and double harness?

The applicant said the warranty was not in writing, but was made in the presence of a witness.

Mr. Bingham said it did not matter about the warranty being in writing if it could be established by credible witnesses. He did not see what he could do in such a very common case. The buyer ought to have exercised more caution.

Applicant intimated that the horse had been “loaded”—that is, gorged with shot by some process, which gave the animal a temporary appearance of soundness; but when it was taken home to the stable, and a little water given to it, the cheat was detected by the liquid running immediately through the body. After this a run of a dozen yards made the animal, to use the applicant’s words, “holler like a don-

key." His country friend took the horse back to the Lane, and was offered £3 for his bargain by one of the same gang, who, no doubt, wished to load the animal again for another country purchaser. There was a regular "ring" of dealers, who stood in the Lane looking out for victims.

Mr. Bingham said the only chance the countryman had was the County Court, and then, possibly, after incurring £10 in law expenses, he might find that the seller was not worth a shilling.

The applicants then left the court.

ADVICE TO MASTERS AND MISTRESSES.

"THERE was once a fellow who asked a philosopher a question, saying, 'How is a horse made fat?' The philosopher answered, saying, 'With his master's eye:' not meaning that the horse should be fed with his master's eye, but that the master should oversee the horse, and take heed to the horse-keeper, that the horse might be well fed. For when a man rides by the way, and comes to his inn, and gives unto the hostler his horse to walk, and he himself sets at the table and makes good cheer, and forgets his horse, the hostler cometh and saith, 'Sir, how much bread shall I give unto your horse?' He saith, 'Give him twopenny worth;' I warrant you this horse will never be fat. Therefore a man should not say to the hostler, 'Go, give him,' but he should see himself that the horse have it. In like manner, those that have servants must not only command them what they shall do, but they must see that it is done. One other man asked that same philosopher this question, saying, 'What manure is it that makes a man's land most fruitful in bringing forth much corn?' 'Marry,' said he, 'the owner's footsteps.' Not meaning that the master should come and walk up and down, and tread the ground; but that he would have him come and oversee the servants tilling the ground, commanding them to do it diligently, and so to look himself upon their work: this shall be the best manure, saith the philosopher. Therefore never trust servants, except you are assured of their diligence; for I tell you truly, I can come nowhere but I hear masters complaining of their servants. I think verily they fear not God, they consider not their duties."

FISHING IN CHINA.

“THE multitudes of persons who live by the fisheries in China, afford evidence not only that the land is cultivated to the greatest possible extent, but that it is insufficient to supply the necessities of the overflowing population; for agriculture is held in high honour in China, and the husbandman stands next in rank to the sage or literary man in the social hierarchy. It has been supposed that nearly a tenth of the population derive their means of support from fisheries. Hundreds and thousands of boats crowd the whole coast of China—sometimes acting in communities, sometimes independent and isolated. There is no species of craft by which a fish can be inveigled which is not practised with success in China—every variety of net, from vast seines, embracing miles, to the smallest handfilet in the care of a child. Fishing by night and fishing by day,—fishing by moonlight, by torchlight, and in utter darkness,—fishing in boats of all sizes,—fishing by those who are stationary on the rock by the seaside, and by those who are absent for weeks on the wildest of seas,—fishing by cormorants,—fishing by divers,—fishing with lines, with baskets,—by every imaginable decoy and device. There is no river which is not staked to assist the fisherman in his craft. There is no lake, no pond, which is not crowded with fish. A piece of water is nearly as valuable as a field of fertile land. At daybreak every city is crowded with sellers of live fish, who carry their commodity in buckets of water, saving all they do not sell to be returned to the pond, or kept for another day's service. And the lakes and ponds of China not only supply large provisions of fish—they produce considerable quantities of edible roots and seeds, which are largely consumed by the people. Among these the esculent arum, the water-chestnut (*scirpus tuberosus*) and the lotus (*columbium*) are the most remarkable.—*Sir J. Bowring*.

OBITUARY.

Died at Caistor, on the 2d May last, after a lingering illness, aged 76, Mr. W. Hargrave, M.R.C.V.S. He obtained his diploma about 1804.

At Wakefield, on the 2d July, aged 57, Mr. J. Morville, M.R.C.V.S. He had been suffering from disease of the heart for the last six or seven years, and has left a widow in

very indifferent circumstances; so much so, indeed, that Mr. Dray, M.R.C.V.S., Leeds, has kindly undertaken to collect subscriptions for her future support. Ought these things so to be? Where is our Benevolent Society for Widows and Orphans? When will the profession act in consonance with its noblest and best interests? Mr. Morville's diploma bears date Feb. 24, 1823.

Killed in the massacre at Meerut, on May 11th, when the native regiments mutinied and murdered their officers, John Phillips, M.R.C.V.S., and Charles J. Dawson, M.R.C.V.S., both in the Honourable East India Company's Service, Bengal Presidency. Their respective diplomas bear date Dec. 15th, 1831, and May 7th, 1836.

We have also been informed of the death of Mr. E. J. Shelford, of St. Kitts, West Indies, of phthisis pulmonalis. He died at Chesterford, having come over to England a short time since, hoping to receive benefit from the change of climate. He obtained his diploma May 11, 1853.

“We may not know,
While life endures, whose lot is joy, whose woe,
Whose is the sunlight, whose shall be the shade.”

* * * * *
“Change is our portion here.
Soon we shall reach that final shore
Where the present is abiding,
And where change shall be no more.”

Since the above was sent to press, we have received the following:

NEWCASTLE, STAFFORDSHIRE,
18th July, 1857.

DEAR SIRS,—With sorrow I inform you that my poor son, William Carmichael M'Kenna, died last night, in consequence of an injury received from his horse falling. I was present to see his last.

Very sincerely yours,
WM. M'KENNA.

Mr. W. C. M'Kenna graduated in 1853. It was a melancholy satisfaction to the parent to be *accidentally* present at the death of his son. With him we sincerely sympathise. To us, by the sad and unexpected event, is significantly read the lesson, “Be ye also ready,” since in the midst of life we are in death.

THE
VETERINARIAN.

VOL. XXX,
No. 357.

SEPTEMBER, 1857.

Fourth Series,
No. 33.

Communications and Cases.

ON THE SOUNDNESS AND WARRANTY OF
HORSES.

By CHARLES DICKENS, M.R.C.V.S., Kimbolton.

A VERY interesting letter on the above subject appeared in your number for last November, from Mr. Hawthorn, which was succeeded in January of the present year by one of an excellent practical nature from Mr. Gregory, of Bideford. I have been somewhat disappointed, that these communications have not, from the importance of the subject of which they treat, been commented on by some of your numerous readers; but in the absence of such, I have ventured to throw together a few observations.

The first of these gentlemen is a notable example of one, who having retired from the profession, and now deservedly enjoying his "*otium cum dignitate*," is yet fond of devoting a portion of his leisure time in giving his juniors some of the results and experience of an active life. Mr Hawthorn is of opinion that the subject would be much advanced by an Association of veterinary surgeons who have had some years of experience, and if so none would be more eligible than himself to be of the number.

I do not think he has been quite happy, however, in the title of his paper, "Too much Science," because I am of opinion that "*practice with science*," tact, talent, and discretion, are never more needed in the veterinary surgeon than when engaged in the examination of horses, as not only his own reputation, but also a considerable portion of the hard cash of his client are *at stake*.

I contend that it is his duty in the prosecution of this part of his professional avocation, to point out the least

deviation from health, or any abnormal development which he may detect, and at the same time to give an opinion grounded on his practice and experience, as to the probable consequences of the defect upon the future usefulness and value of the animal in question.

I must therefore give my opinion in favour of the veterinary surgeon, of whose individuality I am ignorant, whom Mr. Hawthorn has quoted as having rejected a horse on account of an incipient *corn*. It is true, as that gentleman states, that with ordinary care all would soon have been set right; but we must suppose the converse, namely, that on the horse being put to work on the London stones, further extravasation of blood would take place, and be followed by tenderness or positive lameness, and consequent loss of service. It is with horses as with men, time is money.

The perusal of this case brought to my memory one somewhat analogous, which occurred some few years past, and in which I had the pleasure of meeting Mr. Hawthorn in consultation, when the affair was amicably and satisfactorily arranged. The particulars are these. A client of mine sold a young horse to a person in Northamptonshire, believing him to be perfectly sound; but he subsequently received notice of his return on account of a "curb."

At our meeting, on my closely questioning the groom of the purchaser, he acknowledged that upon being sent on a hurried mission, by his master, he had galloped the horse some miles, and jumped him over several stiles, and other things. I contended that this evidence was quite sufficient to show that the curb might have been produced since the sale, and I recollect how ingeniously my friend tried to convince me, as his junior, of the great probability of the curb having existed in *a slight degree* at the time of the sale. I should suppose much in the same *ratio* as the corn he objects to, existed in the horse's sole.

Mr. Gregory, in his communication, quotes some cases of horses with bony enlargements at the seat of spavin, having been retained by their owners on his recommendation, and which continued free from lameness.

The question, however, arises, were the animals of equal value to sound ones in the market? The same argument would apply to a chandelier, a mirror, or a decanter, which had a star or flaw; it may answer every purpose for which it is intended, yet if offered for sale a great depreciation from its original price must be submitted to.

A case in point came under my notice three years ago. A gentleman purchased a five-year-old, weight-carrying

hunter, subject to my approval. On *examination*, I reported him as sound, with the exception of an enlargement to some extent of the right spermatic cord, from an opening, connected with which there was a slight discharge. My opinion was, that at times it might be a source of annoyance, but I had no fear of any ultimate ill effects resulting. He was kept, and has now gallantly carried his owner through three seasons, and I hope soon to see him doing the same in the fourth. His affection remains in *statu quo*. In this case, by being over fastidious, as good a hunter as ever followed the hounds would probably have been sacrificed to the drawing of a cab through the London streets.

Our profession is often reflected upon and even censured, in consequence of the very conflicting evidence which is given by members of equal standing in what are termed "horse causes;" but I would ask, are we alone in this respect? Do we not observe the same thing to occur with engineers, architects, &c.? Why, even the members of the medical profession have afforded abundant proof of the same thing in the late memorable poisoning cases of Palmer and others. Here we have found men of the highest standing and attainments directly opposed to each other in matters of science.

I have long entertained an opinion that it would be far better to do away with the practice of warranting horses altogether. If a party is about to purchase land, houses, colonial or home produce, and do not feel sufficient confidence in himself, recourse is usually had to an *agent* or *broker*, in whose judgment he confides. Could not the same plan be pursued in the buying of horses? Would not the veterinary surgeon be more frequently consulted and benefited? And would not the hard, and I fear I may add, on some occasions with ordinary witnesses, false swearing, be done away?

The only parties, perhaps, who would suffer from such an arrangement would be the lawyers, and who, I may say, very often on such occasions betray a great want of judgment.

CASE OF MELANOSIS.

By JOHN TOMBS, M.R.C.V.S., Stratford-on-Avon.

Feb. 7th, 1857.—My attendance was requested to an aged gray cart-mare, belonging to a farmer five miles hence, which had been under the care of a farrier for five weeks, who had told the owner that she would soon be fit for work, as she was only lame in the “round bone” from a slip, and for which he had inserted a rowel. When I saw the mare, I observed that she was much emaciated, had a quick pulse and no appetite. When down she could not rise without assistance, and on being walked out she went stiffly with the off hind limb. On examination I could only discover a slight tumefaction situated between the spinous processes of the ilium, and extending a little way down on one side in the course of the *obliquus externus abdominalis*.

Prognosis unfavorable

She only lived to the 10th.

Post-mortem examination.—Liver much enlarged, hardened, and full of black tubercles, which, when cut into, were found to contain an ink-like fluid, which stained the scalpel. A large melanotic tumour also rested on the brim of the pelvis, from which it reached downwards to the extent of eight inches. The tumour was enveloped in a thick membrane, and connected with it were several others lying chiefly on the inner surface of the ilium, but extending through the foramen to the upper and outer side of the bone, where one of considerable size was placed, which accounted for the enlargement of this part that I had observed prior to death. From the pelvis to the diaphragm, and lying in close contact with the posterior aorta, was an unbroken chain of small melanotic tumours precisely like the one before described. I have made a great many autopsies in the course of my professional career, but never saw such extensive disease as existed in this case.

SINGULAR CASE OF STRANGLES AND DISEASED GLANDS.

By the Same.

THE subject of this disease was a black cart-horse, five years old, to which my attention was called on April 3d, 1857.

Symptoms.—On examination, I found an enlargement of the left parotid gland to an extent sufficient to cause considerable impediment to the process of respiration. His appetite, however, was good, and the pulse undisturbed. A blister was applied to the part, which so much relieved him that he was put to work a few days afterwards. Very shortly the roaring returned, when the blister was repeated. By the 15th an abscess had formed, which was lanced, and a large quantity of matter having a bluish aspect escaped. This afforded great relief, but by the 20th, the swelling had again increased, although there was an abundant discharge.

22d.—Another abscess has formed between the angles of the jaw, and the noise occasioned by its pressure on the air-passages is greatly increased; indeed the animal can scarcely breathe. The relief obtained by the immediate opening of this abscess was so marked, that in about an hour afterwards the breathing had become comparatively free. If such had not been the case I had determined upon opening the trachea. After this, all went on apparently well, until the 6th of May, when contrary to my instructions he was turned to grass.

On the 9th he became suddenly very much worse; he opened his mouth widely, roared loudly in his breathing, staggered, and fell in great agony, the perspiration rolling off him in large drops. A messenger came for me, but before I arrived he was dead. On making a post-mortem examination, I found the parotid gland much enlarged from disease. Several minute abscesses had formed in it; besides which a scirrhus tumour, as large as and resembling an egg in its shape, was situated on the upper part of the trachea, where from its pressure it had flattened the tube, and when cut into was found to contain a quantity of pus. Several other small tumours existed about the vicinity of the glands and base of the tongue. The epiglottis was thickened, and the larynx flattened, more particularly on its upper part, and no doubt from the pressure of the tumour which was observed at the beginning of the animal's illness. Between this tumour and the first two cervical vertebræ was a quantity of matter of a brownish-red hue. The *velum palati* was so much stretched, that its texture was as thin as the finest silk. The trachea and bronchia contained some blood and frothy mucus. The lungs were congested, as was to be expected from so violent a death. In three places in the duodenum and jejunum, for about a foot in length, the mucous membrane was highly congested, and covered with matter similar in appearance to

that found between the larynx and the upper part of the trachea and the cervical vertebræ.

OBSTRUCTION IN THE INTESTINES.

By the Same.

June 8th, 1857.—An old, half-bred horse was observed to be suffering abdominal pain, to relieve which he was bled, and had a gripe-draught administered. I saw him by request on the following morning at about nine o'clock. He was then turned out, was eating grass, and appeared free from pain. I repeated my visit at four p.m., when I found him rolling about, looking back at his flanks, and evidently in great pain. The means usually adopted in these cases were put in requisition, but with little benefit.

10th.—He refuses both food and water; backs himself against the side of the stable, and presses his breast against the door. At times he lies down and rolls, but occasionally places himself flat on his side. On attempting to get up, he sits on his haunches. The pulse is greatly accelerated, varying from 90 to 100 beats in a minute. The bowels are constipated, indeed no excrements are voided; and in this state, strange to say, he lived till the 20th, when death put an end to his sufferings.

Post-mortem examination.—The stomach was distended with the liquid and medicine which had been given, and in the jejunum a mass of half-masticated and half-digested vetches was found firmly impacted. It was as large and as hard as a cricket-ball, and covered with mucus; while the intestine at this part was in a gangrenous condition. It was evident that no treatment would have sufficed to remove this hard and impacted mass. The colon was likewise much distended with a quantity of *partially digested vetches*.

RUPTURE OF THE STOMACH.

By the Same.

June 28th, 1857.—A black cart-colt, three years old, was taken ill while at plough, at eleven p.m.; he was, however,

worked the remaining part of the day, and on being turned out in the evening was observed to roll about.

The owner had him bled, and gave some of "Day's mixture," but without relief being obtained, and after waiting several hours, he sent a messenger for me.

I did not arrive until past midnight, when I found the colt suffering acutely from abdominal pain. He would lie down and roll from side to side. Occasionally, however, he would lie on his back for several minutes together, groaning piteously. The pulse was full, and numbered about 78. A profuse perspiration covered his body, and the symptoms upon the whole plainly denoted that he would not recover. In this state he continued till nine a. m., when he expired.

On making a *post-mortem examination*, a large rent was found in the stomach near its pyloric orifice fully eight inches in extent. A considerable quantity of *undigested vetches* had also escaped from the stomach into the cavity of the abdomen. Every other part of the body was quite sound.

A NEW EPIDEMIC AMONG HORSES. PARAPLEGIA, OR SPINAL PARALYSIS.

By M. SMALL, M.R.C.V.S., Dundalk and Newry.

THE alarming frequency of the disease *paraplegia* in the horse occurring in my practice at the present time, induces me to trouble you with this communication. The importance of the matter to agriculturists is great; and if the disease should assume an epidemic character, and appear in other parts of the country, the following remarks may prove of service to your readers.

CASE 1.—A short time since I was sent for in a hurry by Mr. Stephen Feehan, a farmer near Carlingford, to see two valuable cart-horses that had been taken suddenly ill on their way to Dundalk market with a load of grain. They had reached the village of Riverstown and accomplished half their journey when they appeared weak and staggered on the road. One of them, a strong six-year-old chestnut mare, fell down almost immediately on being loosed out of harness. It was thought she had *gripes*, and the usual country cure of pepper and whisky was abundantly administered. It was soon found, however, that the mare could not be got on her legs,

and she was dragged into an adjoining field, where I found her lying prostrate, and although covered over with straw, shivering from head to foot from a cold rain. No power of sensation or of motion in the hind extremities existed; and the pulse numbered 90. Neither the servants or neighbours having any better means of bleeding her, a piece of the poor animal's tail had been chopped off before I arrived. This barbarous treatment, together with the stimulant administered, so aggravated the disease that I pronounced the case a hopeless one. We, nevertheless, had the poor animal taken carefully home in a float, where the greatest attention was paid to her, but without avail, as she died on the third day from the attack.

Sectio cadaveris.—Although a very careful examination was made, I could not find any lesion which would account for the symptoms or death of the animal. The lungs were slightly congested, and the bladder was full of urine, besides which there was, however, nothing remarkable.

CASE 2.—The other animal of Mr. Feehan's, affected with the same disease at the same time, was a strong four-year-old gray mare worth fifty or sixty guineas,—I found the disease fully developed. She staggered in her gait, and could not walk straight forward, the power of both hind extremities being partially lost. I bled her copiously from both jugulars at once; had the back and loins stimulated; extremities bathed in hot water and bandaged; and the bowels relieved as far as practicable by glysters. My assistant remained with her all night to administer sedative medicine every three hours, and to see that she had nothing of any kind given her either to eat or drink. By these measures we subdued the disease, and on the evening of the next day she was so much better as to be able to walk slowly home, and ultimately recovered.

CASE 3.—The next case that came under my notice was that of a three-year-old colt, at Killencool, near Dundalk, the property of Trevor Wright, Esq. He was seized with the disease at grass on the 4th ult., and was observed to "rock on his hind end when he moved," as the steward said, "and several times to nearly fall down." He was taken into a loose box and bled.

I found the animal on my arrival, as if in good health, feeding greedily on cut grass; but on walking him out the affection was at once manifest, as he could not turn sharply round without great danger of tumbling. Active medical treatment was immediately adopted, and the muzzle applied.

Next day on my visit I ascertained that he had fallen, or

rather thrown himself down several times, and had thereby inflicted sundry bruises on his body. I had him removed to a more roomy box, where he remains and is very much better, but still under treatment.

CASE 4.—On the 7th ult., I was sent for by Sir John Macneill to visit an entire horse that was working on his farm at Mountpleasant, near Dundalk, up to the evening before. He was observed to reel on his hind legs when loosed out of yoke. He used his fore legs well enough, but could not manage the hinder, as the messenger said. This was hint enough for me of the nature of the complaint.

Upon my arrival I found, as I had expected, another case of paraplegia. He had lain down, and it required the help of a number of men to get him up and removed to a proper place. The extremities were partially paralysed, but not insensible, as the touch of a needle on the hind fetlock made him warn me not to try it again. He was immediately bled; counter-irritants were applied to the spinal column and a purgative administered, &c.

CASES 4, 5, 6.—The next day, the 8th instant, I was surprised by an order to immediately visit *three other horses* of Sir John's, similarly affected. I found all of them in the same way, labouring under the same complaint, but differing only in degree. One of these, an aged mare, had no sensation at all in the hind legs below the hocks. I did not bleed in this case, as the feeble state of her pulse forbade it; but the extract of belladonna in large doses was administered. I have the pleasure of adding that the four animals are progressing favourably, and appear at the present time in a fair way of recovery.

CASES 8, 9.—Upon Thursday, the 10th instant, Mr. William Clarke, of Rostrevor, required my attendance to two of his stud affected with "staggers," as he described it. I found both animals in a field of grass. One of them, a brood mare, lay thoroughly prostrate on her side, and unable even to lift her head off the ground without help. She would, however, readily eat when food was put to her mouth, and the angles of the jaws were absolutely abraded by friction on the ground in the process of mastication. She had no feeling in her hind quarters, and to raise her up was impossible. Her pulse was 70, and very weak.

My employer had given this case up as hopeless; but as in professional avocations *nil desperandum* is my motto, I put the animal under the same course of treatment as my other patients, and I rejoice to say that our efforts were so far crowned with success that this mare got up without assistance

on the following Sunday, and walked nearly half a mile to her stables.

The other case of Mr. Clarke's was that of a three-year-old filly that was attacked on the same day as the old mare, and was in the same field with her. She could not walk without staggering, and would fall if made to back or to turn sharply. She was very carefully led home and placed in an airy outhouse, where she had room enough to move about. I bled her copiously, and subjected her in every respect to the same treatment as the others already described, with the addition of the application of sheep-skins, with the flesh side inwards, to her back and loins.

SECOND COMMUNICATION FROM MR. SMALL ON PARAPLEGIA.

Since the above was forwarded for publication, I have had several other cases of paraplegia in my practice, all of which have presented the same symptoms, and yielded to the same course of treatment, except one, a young mare rising two-years old, the property of Mr. Terence Ottere, of Dundalk, and which died on the third day after the attack.

I have been called to a case today, August 6th, however, that presents a new feature; viz., a continual and involuntary discharge of urine in small quantities, about as fast as it may be supposed the kidneys could secrete it. This horse is a valuable hunter, six years old, and the property of Dr. Savage, of Newry, a surgeon of great celebrity here, who is likewise a veterinary amateur and sportsman, and who, as may be supposed, takes a deep interest in the case. The horse is his favorite hunter, and has been lying idle in a large, loose box, since the termination of the hunting season in April last. He was in prime health and spirits on Sunday last, but on Monday it was observed that he went "queer" behind. On Tuesday he could not be got up, having lain down during the night.

My assistant administered a dose of physic; and the doctor himself, on his own responsibility, gave another cathartic in the shape of a bottle of castor oil. The animal, as was to be expected, was consequently super-purged. I found him, to-day, lying flat on his side, with the uppermost fore leg stretched out and trembling, as in a tetanic patient which has fallen just before death. The pulse is full, and not over 50. He feeds well when his head and

neck are held up, but he struggles to rise rather more than any other case I have seen; so much so, as to oblige me to put the hobbles on him. The involuntary discharge of urine is puzzling. There is also an apparent convexity of the spine existing, and which the doctor says the horse had not before, which is equally difficult to satisfactorily account for.

The horse was twice bled yesterday, and I therefore did nothing more than apply an active counter-irritant to the spine. Precautions were also taken to protect the horse's knee and fetlock joints from being damaged by the floor of the stable. A few days sufficed to end his sufferings.

Post-mortem examination, twelve hours after death.—*Thoracic viscera*.—Lungs healthy; heart healthy. The left ventricle contained about four ounces of solid matter, whitish in colour, and having a far more adipose-like appearance, than clotted fibrine usually has when deprived of its colouring matter. *Abdominal viscera*.—Stomach and bowels free from disease. In the left kidney a cyst was met with which contained about three ounces of purulent matter. The bladder was filled with urine, and its mucous coat was red from inflammation.

Nervous system.—Brain healthy; but the spinal canal in the portion corresponding to the lumbar and sacral vertebræ, was filled with a chocolate-coloured fluid of about the consistence of simple syrup.

It is somewhat singular that the bladder should be found full, as during the animal's illness the urine never ceased to trickle from him.

NEWRY; Aug. 6, 1857.

CASE OF STRANGLES APPARENTLY DEPEND- ING ON CHOKING.

By W. G. REEVE, M.R.C.V.S., London.

ON the evening of the 30th April last, I was hastily sent for to see a roan horse, aged 6 years, which had been some few days out of health, during which time he had been under the treatment of the farrier of the firm to which he belonged.

The symptoms were characterised by an excessively loud and distressing kind of roaring; the horse appeared to be partially suffocated; saliva was running from the mouth, and the respiration was quite painful to witness.

The history of the case was this. "The horse had been unwell for some days, when suddenly this afternoon these symptoms had come on, and, although the farrier had done all he could, they thought (as the horse seemed scarcely able to breathe) the best thing would be to insert a tube in his windpipe."

Upon examination, I found the vital powers were far less depressed than a casual observance would have led me to expect. The extremities were warm; and there was no appearance of pneumonia. The roaring, I observed, principally took place during *expiration*. It could not, therefore, be from the ordinary causes. The horse drank freely and copiously of cold water, showing there was no obstruction to deglutition. Upon auscultating the chest, trachea, and throat, I was enabled to refer the noise to the nasal passages, and finally, to fix upon the palatine region as being the seat of the temporary lesion. Having mentally arrived at a conclusion respecting these violent symptoms, I proceeded to a more minute inspection. The pulse was quick and feeble; the visible mucous membranes blanched; the submaxillary glands swollen, and the throat bore evidence of having been stimulated. There was no nasal discharge, and the air came freely from both nostrils. The horse had had a cough, and was reported to have shown symptoms of a slight cold. Although the owner had bred him, no one recollected his having had the strangles. Its value was 70 guineas. My diagnosis was, therefore, "strangles," occurring at a late period and in an unusual form, and accompanied by paroxysms, the cause of which is at present obscure.

Upon asking the question, I found that the farrier had given a ball *just before the roaring commenced*. I accordingly explored the fauces, but could not discover anything, and it was not until the third day after my first attendance that I was informed that the ball was coughed up again with great violence; and, consequently, the farrier must, from the first, have been aware of the cause of the alarming excitement. I mention this, to show the necessity of caution in pronouncing a diagnosis, since it is often the interest of individuals, not only to hide circumstances from our knowledge, but sometimes wilfully to mislead us.

My opinion being formed, I of course declined performing the operation of tracheotomy, considering that the severity of the symptoms would subside under the treatment which would be adopted for the affection itself.

Treatment.—Apply a blister to the throat and larynx; let the bowels be relieved by glysters, and the patient have a

liberal supply of cold water, hay-tea, or gruel, also place him in a loose box where he can have plenty of fresh air.

May 1st.—The roaring is much diminished. It is heard during inspiration principally to-day. Pulse 60, and weak; membranes pallid. The appetite good. Still no discharge from the nostrils. Keep the bowels open with glysters; steam the head, and use terebinthinate fumigations. Give tonics combined with some doses of calomel, and allow a liberal and generous diet.

2d.—Roaring considerably less; nostrils discharging slightly; pulse 55, and fuller. Repeat the medicine ordered yesterday.

3d.—Roaring almost gone. Pulse 50, appetite good; nostrils discharging. Exhibit vegetable tonics, with iron. Steam the head, and feed liberally.

4th.—The case is characterised by extreme weakness. The fore legs, at times, seem to give way; the pulse is 60, and weak; the visible mucous membranes very pallid. The roaring has disappeared, and the nostrils are discharging, but, notwithstanding the application of the blister, the throat does not "point." Persevere with the tonic medicines, and poultice the throat.

5th.—Animal much the same. Continue the treatment as before.

6th.—Opened a trifling abscess under the jaws.

7th.—A thick mucous discharge takes place from the eyes; the discharge from the nostrils also continues. As there is a slight difficulty in urinating, give Potassæ Nit. morning and night.

8th.—Although the throat is now quite denuded from the blister and poultice, there seems to be no other abscess forming. The patient is still very weak. Continue the tonics as before ordered, with liberal diet, and poultice the throat. The eyes and nostrils now discharge copiously.

11th.—The cheek, under lip, and sub-lingual glands, are greatly enlarged; the discharge from the nostrils and eyes continues undiminished; pulse 48; appetite good, and the horse seems stronger. Continue the tonic medicines, foment the swollen parts, and apply dilute Tincture of Cantharides thereto.

12th.—Patient much the same. Opened two small abscesses under the throat. Continue the poultice.

13th.—Stimulate again the swollen cheek and throat. Medicine as usual.

14th.—Opened a large abscess in the sub-maxillary space, and inserted an issue. The sub-maxillary region is still much

tumefied; there are also large swellings at the base of each ear, and at the supero-posterior parts of the orbits, in which pus can be detected. Dress the wounds, stimulate all the tumours, and continue tonics and good feeding.

15th.—The patient much the same; tumours enlarging, appetite good. The legs are swelling, and the urine is scanty. Administer a diuretic ball in addition to the usual medicine.

16th.—The abscess in the sub-maxillary space discharges freely, but the nostrils discharge less, and the eyes are clearer. The tumour on the cheek is of considerable magnitude. Continue treatment as before.

18th.—Opened a large abscess on the cheek, and another at the base of the ear, from both of which nearly a pint of pus was evacuated. Dress wounds, and continue the tonic medicine.

21st.—The patient is cheerful and the appetite good. From the great weakness which has accompanied the case, the animal has not been able to protrude the penis when staling; consequently, accumulations have taken place within the sheath, which now impede the passage of urine. Let the parts be well cleansed and lubricated with oil.

I opened another abscess on the “off” side of the head, situated supero-posteriorly to the orbit, from which a large quantity of pus was likewise discharged. Omit the balls, and give sulphuret of antimony with chloride of sodium, in the animal’s corn and chaff, morning and evening. The patient has become very thin, and is still weak, but he looks tolerably cheerful, and eats as if nothing ailed him.

23d.—The horse is better; the discharge from the wounds and nostrils is rapidly diminishing; the early wounds are healing fast, the pulse is 42, and the strength returning. Allowed walking exercise, and continued the powders as before. From this period the patient rapidly improved. All the wounds healed quickly, and, when sufficiently convalescent, he was turned out in the salt-marshes. I heard of him on the 12th of the following June when he had recovered both health and condition, and to use the owner’s words, “was a better horse than ever.”

Although this attack was very irregular in its approach, progress, and development, and throughout was marked by extreme debility, still, by the steady exhibition of iron combined with vegetable tonics, we kept up a good appetite, and thus enabled the vital powers to resist the disease. The *vis medicatrix nature* will always help us when we allow it.

EFFECTS OF SULPHURIC ETHER IN A CASE OF TETANUS.

By the Same.

ALTHOUGH I give the following case on report, it perhaps may prove suggestive on some future occasion.

Whilst conversing with the gentleman who owned the subject of the preceding case, respecting the same horse, and which he had that day been visiting in the marshes, he informed me that he had found an old pony, aged 20, which was turned out at the same place, in a most deplorable condition, being evidently, from his description, in an advanced stage of idiopathic tetanus. As the weather was very hot, and the pony had received no injury, it was supposed that a "coup de soleil" had been the cause of the attack. He described every limb as being stiffened and spasmodically jerked; the muscles of the neck and jaws tense and hard, "like cords;" the membrana nictitans forced over the eye, and that one eye appeared as if it had been driven in. As the gentleman seemed quite certain of the hopelessness of the case, the pony being so old, and the exhaustion so great was not thought expedient to engage my professional attendance. I however advised him to try Sulphuric and Ether, which he accordingly did the same evening, using about ℥iij, a portion of which was given in cold water, and the remainder the pony inhaled. The result was that the pony soon revived; all the tetanic symptoms quickly disappeared, the sunken eye resumed its fullness and natural appearance; the limbs became pliant, and the muscles of the neck, which he had observed were like "cords," became soft and flaccid, and the animal walked to its stable, about half a mile distant, and, although it subsequently died from old age and complete exhaustion, the symptoms of tetanus did not again return.

RUPTURE OF THE VAGINA IN A MARE DURING PARTURITION.

By J. MEYRICK, M.R.C.V.S., Newtown.

AT the latter end of last April, I was sent for to attend a mare, at a farm a few miles from here, which was unable to

foal. On my arrival I was informed that the labour pains had commenced two or three hours previously, but without any appearance of the foal. On introducing my hand into the uterus, I found the foal so situated that there was scarcely any difficulty in placing it in a proper position; but while I was attempting to bring one of the fore feet through the os uteri, the mare strained very violently, and which led to an immediate protrusion of a portion of the vagina in the form of a large bladder, close to my shoulder. Immediately afterwards the vagina burst, and a quantity of the intestines gushed out through the rent, the mare falling down at the same instant. The mucous membranes of the mouth and nose became blanched almost immediately, and the pulse so tremulous and weak as scarcely to be felt. I told the owner that internal hemorrhage was going on, and that the mare would quickly sink.

In about fifteen minutes she was dead, and on opening her I found a large quantity of blood in the abdomen, from a rupture two or three inches in length, in one of the common iliac veins. A great deal of blood had also escaped from the rent in the vagina. The foal was a very fine one, but dead.

As a very similar case to this appeared in the *Veterinarian* for last month, you may perhaps not see fit to insert it, but I send it, because it shows the necessity of attending as quickly as possible to mares when they are foaling. Any man of ordinary intelligence might have saved the mare in question, had he been early with her, and properly adjusted the foal at the commencement of the labour.

PARALYSIS IN A COW, ASSOCIATED WITH FIBRINOUS DEPOSITS.

By the Same.

ABOUT the beginning of this month, July, a farmer requested me to see one of his cows which had been paralysed for two days previously. The cow was a young one, hardly full grown. She had never shown any symptoms of illness until about a week before, when she began to walk stiffly, and gradually became worse, until she was unable to rise.

A tumour had been observed on the left shoulder about the time she was first taken ill, which the owner had opened,

and taken out of it a quantity of apparently unorganized fibrinous matter. There was now a large swelling around the left stifle-joint, and the cow appeared to suffer a great deal of pain. I ordered a fresh sheep-skin to be placed upon her loins, and for her to take—

Magnes. Sulph., ʒvii ;
Sulphur., ʒvi ;
Potas. Nit.,
Pulv. Zingib., āā ʒss .

in some thin gruel.

The purgative operated mildly. The next day gave—

Sulphur., ʒj ;
Pulv. Nux Vom., ʒss ;
Pulv. Gentian., ʒss ;
Pulv. Zingib., ʒij ;

night and morning in a pint of ale.

On calling the following day I found the cow dead.

On making a *post-mortem* examination, a large quantity of effused lymph was found around the stifle-joint, and intermingled with the muscles of the thigh. There was also some inflammation of the left pleura, with a few adhesions. Underneath the lumbar vertebræ was a deposit, several inches in length, and about three in breadth, of partially degenerated fibrine. The omasum was filled with food, and its lining membrane was so softened that it could be very easily torn. The spinal marrow did not show any congestion, but it was rather softer than natural. There was no appearance of disease in either the liver, lungs, or kidneys.

A CASE OF DIFFICULT PARTURITION IN A HEIFER.

By C. LAYCOCK, V.S., Hirst Courtney, near Selby.

ALTHOUGH the following case did not terminate favorably, it is recorded, so that if blame attaches to any one, it may fall where due; and if a warning can be gathered, you may perhaps consider it worthy of insertion in the *Veterinarian*.

On April the 1st I was called to a heifer which was in labour, the property of G. Davison, Esq., West Haddlesey, Selby, Yorkshire. I was told that "all four feet of the calf wanted to come together," no suspicion existing that there was more than *one* calf in the uterus. On examination I

found that twins were present, and that their legs were so entangled with each other, from the parties attempting to deliver the heifer before I arrived, that it was almost impossible at first to ascertain in what position either calf was presented. Subsequent exploration proved, that the parties had drawn *the legs of one calf*, with the *head* of the other so forward, that I could not return either the legs or the head into the uterus. Having ascertained that both the calves were dead, I at once commenced taking off one of the protruding limbs, but could not even afterwards make any satisfactory progress. The other leg of the same calf was then amputated, when with some difficulty I removed it. As the heifer was much exhausted, I gave a full dose of Spts. Æth. Nitr., and ordered the vagina to be well fomented. Subsequently some oatmeal gruel was horned down, and the general comforts of the animal attended to for about two hours after her delivery. The parturient pains gradually abated, and at length ceased altogether. In consequence of her extreme prostration, I advised that she should be kept as still as possible, have a little gruel administered occasionally, and be watched as to the return of the pains. It being now late in the evening, I told them I would see her early next morning, and then give my opinion as to whether it would be advisable to attempt to deliver her of the other calf, or leave her a still longer time to nature; it being my impression, that if she were not allowed sufficient time to recover her strength, on a delivery of the second calf being effected, she would sink. When I arrived the next morning, however, I was informed that, soon after I had left on the previous evening, a farrier was sent for, and that he had the animal's hind parts drawn up by pullies, or, as they termed it, she was slung, and the calf *extracted*. I immediately returned, and without seeing the heifer, but soon after I learnt that she died the same day.

CHRONIC RUPTURE OF THE SEPTUM AURICULARUM IN A COW, ACCOMPANIED WITH GREAT NERVOUS EXCITATION.

By G. BROWN, Student of Veterinary Medicine, Wing,
Leighton Buzzard.

ON the morning of the 23d of May last, I was requested to attend a cow, five years old, which was said to have been

ailing for some time. The history of the case is as follows:

She had calved three months since, and about a month afterwards she was noticed to do badly; but the proprietor, thinking that the warm weather of the spring, and her being turned to grass would improve her condition, did not consider it necessary to call in a veterinary surgeon. On his finding, however, that with the advance of the spring there was no improvement, but rather, on the contrary, that she gradually became worse, he sent for me.

I found her in a most emaciated condition, and evidently suffering considerably from nervous excitation, exhibiting symptoms akin to those of phrenitis. As she had been ill a long time, I concluded that this excitement was only symptomatic of some other disease.

From her extreme terror and violence it was impossible to ascertain the state of the pulse; and from her greatly emaciated condition, I deemed it impracticable to extract blood. I therefore exhibited an aperient draught, and followed it up in the evening by a mixture composed of—

Spt. Æther. Nit., ʒj;
Tinct. Opii, ʒij.

On the following morning I found her so much composed from the effects of the sedative that I was able to institute a tolerably close examination of the symptoms. The Schneiderian and conjunctival membranes were of a dark blue colour; the muzzle was free from moisture, and the mouth and extremities cold. Upon auscultating the chest, I was struck with a peculiar gurgling sound which was emitted by the heart, and which led me to conclude that there existed some structural disease in the organ. I therefore told the proprietor that there was no probability of her recovery, and that it was next to useless to treat the case.

A few days afterwards, when in the neighbourhood, I was informed that she had fallen down and died very quickly while they were administering some gruel to her on the day following the one I had given her up. Fortunately, the heart, lungs, and liver were preserved, so that I was able to examine them. The liver was normal, as was the heart also as viewed externally; but upon laying it open I found a direct communication existing between the right and left auricle, from a rupture of the foramen ovale or rather, perhaps, of the septum, having taken place, by which the venous blood was partly mingled with the arterial. The rent was about three quarters of an inch in length, and its borders

were jagged. From its general appearance it would appear to have existed for some time. There was no indication of disease of the lungs, although they were much discoloured, arising, I have no doubt, from the fact that they, as well as every part of the organism, were supplied with imperfectly arterialized blood.

I am inclined to attribute the nervous excitement to the same cause, as I think it is quite possible that blood which is impure in its character would produce diseased function of the brain and nervous centres. I very much regret that I was prevented sending the heart to you, as it was my intention to do on the same day I examined it, and afterwards I was afraid it would be in a state of putrescence long before its arrival, as the weather was at the time exceedingly warm.

Facts and Observations.

CONTINENTAL REGULATIONS WITH REFERENCE TO GLANDERS.

THE laws relating to glanders in horses in many parts of Continental Europe are exceedingly strict in their enactments, and as rigorously enforced. The malady is viewed as being very contagious, and in the kingdom of Hanover, as an example, veterinary surgeons meeting with cases in the course of their practice are required to give notice to the police authorities forthwith. The owner of the animal is compelled to have it destroyed without loss of time, and he is further prevented from selling any other horse out of his establishment, no matter what his position may be, in less time than six months subsequent to the death of the affected animal. Besides this he cannot place his horses in the stables of any public inn, nor pasture them in situations where risk is run of their coming in contact with others.

In our own country, until 1853, no legislative measures were specially in force with regard to glanders, but it was then enacted that "any person bringing or attempting to bring for sale any horse or other animal into any market or fair or other open or public place where animals are commonly exposed for sale, knowing such horse or other animal to be infected with or labouring under the disease called glanders, or any person turning out or keeping or depasturing any horse or other animal infected with or labouring under any

such disease in or upon any forest, chase, wood, moor, marsh, heath, common, waste land, open field, roadside, or other undivided or unenclosed land, shall on conviction of any such offence forfeit and pay a sum not exceeding twenty pounds."

This measure was added as an additional clause to an already existing act "to extend and continue the act to prevent the spreading of contagious and infectious diseases among sheep, cattle, and other animals," the provisions of which for the recovery of the penalties were made to apply to the disease in question. We believe that the sheep and cattle contagious disease act applies only to England, and as such Scotland and Ireland are without legislation with regard to the sale of glandered horses; an anomaly which should not continue, and one which we hope to see removed when Parliament again assembles for the despatch of business.

EARLY DEVELOPMENT OF TEETH.

AT the Salisbury meeting of the Royal Agricultural Society, a short-horn bull, whose age, calculated down to the day of the show, according to the certificate of the breeder and owner was *two years eight months and a fortnight*, was found on examination to have put up the whole of his permanent incisor teeth, the corner ones having very recently cut the gum. We deemed this a fitting case for inquiry, and on investigation we were perfectly satisfied with the evidence adduced by the breeder of the correctness of the certificate.

This case we believe to be an extraordinary exception to the rules applicable to the dentition of the ox, and to be the earliest recorded instance of the cutting of the whole of the permanent incisors, and as such it is most valuable in assisting the veterinary surgeon in arriving at a decision in disputed cases of age. We have only met with about ten or twelve cases in the examination of some fourteen or fifteen hundred animals of equal purity of breed as this one, and as well fed and managed, in which the permanent incisors were cut by the time the animal was *two years and ten months* old. Here, however, we have an instance in which they are all in the mouth six weeks before that time.

THE SALE OF HORSE-FLESH AS FOOD FOR THE PEOPLE.

OUR readers are well aware that great efforts have of late been made to introduce a new article of diet into France, namely, horseflesh ; and that principally through the exertions of M. Renault, Director of the Alfort Veterinary School, these attempts have been attended with so much success that numerous families are said now to obtain a daily supply of meat, which were before unable to procure any kind of animal food. In our late continental tour, when in the town of Altona (Holstein), we passed by the shop of one of these horse-butchers, and saw exposed for sale part of the hind quarters, and sundry pieces of flesh of a horse, and also the liver and kidneys of the animal. We were tempted to walk in, when we were informed by the proprietor that there were four other establishments of the same kind in the town, but that his was "the original one." He said that so ready a sale was found for the meat that it was with great difficulty he could procure horses enough for his customers. The price ranged from about 2*d.* to 3*d.* per lb. English money, and it appeared that the meat was often bought by persons who could not be properly said to belong to the lower classes. We were invited to see the establishment, and visited the slaughter-house and stable. In the former, besides more meat, was hanging the lower part of the fore leg and foot of the animal last slaughtered, which had been put aside for the inspection of the police ; and in the latter were standing two aged and worn-out horses waiting their turn to be led to the stake. These butcheries are licensed by the government, and are under the supervision of the police. Notice has to be given before a horse can be killed, when the department veterinary surgeon attends and examines the animal, and if found to be free from constitutional disease, notwithstanding it may be incapacitated for work from lameness or other defects, he certifies to that effect, and for the sake of identity brands the animal on its hoof. Within a given time the animal must be killed, and its leg and foot produced for the inspection and satisfaction of the police.

 VALUE OF ITALIAN RYE GRASS IN SUPPLYING A SUCCESSION OF GREEN FODDER.

Mr. W. DICKINSON, in his excellent pamphlet on Italian rye-grass, says that—"when I have kept the plant

entirely for green food, without growing seed or making hay, I have seldom had less than seven crops during the year, and I have had ten, each weighing from six to twenty tons to the acre. The same results will follow to others using the same means with the same plant. Grass sown in August will produce a crop in an ordinary autumn in November, another in February or early in March, in six weeks a third, in five weeks a fourth, in three weeks a fifth, and in three weeks more a sixth. These two last, grown with a high temperature, may be the two largest crops of the year, perhaps a yard high and thick upon the ground, after which they will require more time, and the crop becomes lighter as the temperature falls with the approach of winter, going from three to five weeks, six weeks, and eight weeks, according to the weather and the attention paid to it. Watering the same day the grass is cut is the only mode to obtain the largest amount of produce. If deferred till to-morrow, which occasionally never comes, two, three, and often seven days are lost."

EXTENSIVE LACERATION OF THE VAGINA OF A COW. " RECOVERY.

Mr. J. W. MAW, veterinary student, has sent us the following particulars relating to a case of wilful laceration of the vagina, and contiguous parts a cow :

Mr. Crosby, who is in practice at Thornton Pickering, Yorkshire, as a veterinary surgeon, was called a short time ago to attend a milch cow which presented symptoms of colic. On his visiting her, he observed a piece of stick about three inches long protruding from the vagina, and on removing it he found that it was about a yard in length, and had been thrust through the vagina and likewise the rectum into the abdomen.

Previous to its removal the cow did not evince such symptoms as one would have been led to expect in an animal suffering from such a severe injury. There was but little external hæmorrhage, the symptoms upon the whole rather indicating that internal hæmorrhage was going on. Anodynes were administered, and quietude enjoined.

No inflammatory symptoms supervened, and in the course of ten days or a fortnight the animal had recovered.

The atrocious act is supposed to have been perpetrated by some gipsies, who were located near the place at the time, from their going in the following morning to beg the carcase, thinking, probably, that the poor animal was dead.

Extracts from British and Foreign Journals.

ON A METHOD OF OBTAINING IMMEDIATE FIXITY OF
TYPE IN FORMING A NEW BREED OF SHEEP.

By M. MALINGIE-NOULE, Director of the Agricultural
School of La Charmoise; President of the Agricultural
Society of Loir et Cher.

Translated by the late Mr. PUSEY.

It would certainly have been very convenient for French farmers if they could have appropriated the results of the long labours of the English, who have succeeded, as all the world knows, in creating races of sheep the best suited to modern requirements. If the thing had been possible it ought to have been effected without national jealousy, but, unluckily, it was not possible. The chief races of English sheep, formed under certain circumstances, cannot remain what they are, where those circumstances are altered. In all countries south of Great Britain there is a great difficulty in fulfilling this condition, and even then the expense is such as to swallow the profit. Merinos have been transferred from Spain to the north, even as far as Norway and Sweden, but English sheep do not thrive when carried southwards to a country even so near as France. It seems, therefore, almost certain that sheep cannot be moved so easily from north to south as from south to north.

But though the races of English sheep could not be kept up in France, we yet might fairly entertain the hope of crossing them with our native breeds. Here then a wide field opened itself for experiments neither expensive nor, as might have been supposed, even difficult. Accordingly there arose a host of experimenters, most of whom, unacquainted with the first principles that govern reproduction, proceeded headlong in the blind hope that chance would afford them that happy solution which they were unable to ask of science, and which chance after all did not give them.

Now, it certainly would be in our power, without quitting French breeds, to form a race of our own, perfect in form, and possessing, like the English breeds, early maturity, with aptitude to fatten. For this purpose we might pursue

a course of judicious selection for a long series of years, aiding this selection by a system of constant care and of nutritious food. But besides that such long-winded operations, requiring great perseverance of view and of will, seldom find men determined enough to conceive and, above all, to execute them, they require in fact more than the ordinary life of man, and therefore cannot be carried out without a succession of experimenters animated by the same views, and employing similar means. Such an enterprise cannot be executed unless by a man who, like the founder of the New Kent breed, Richard Goord, commences young, and lives like him eighty-six years.

In France such an improvement of a breed in itself or *from within* has not been even attempted, at least with respect to perfection of form, power of assimilation (or fattening), and quality of meat. As to the wool, indeed, our breeders of Merinos, while their wool was dear, did aim at increased fineness and evenness of fleece by judicious selection, and in some degree too succeeded. But their success is of little interest now that the price of superfine wool has been lowered permanently by the multiplication of Merinos without cost on the untenanted pastures of Australasia.

The most devoted partisans of the Merino breed have now for some time felt the necessity for making up in mutton what they were losing in the price of their wool. This they could hardly effect with that boniest of all races unless by alloying in some degree the purity of its blood. At first this degradation was concealed, but, gradually growing bolder, they pronounced at last the word "cross." Still it was required that the new animal should preserve the Merino countenance, and that its wool, though coarser, should be fit for the same purposes as before. This latter object was much favored by a natural law, as well as by the progress of manufactures. In fact, through the improvement of machinery, new stuffs are now produced from the coarse wool as delicate as heretofore from the fine.

Hence arose a multiplicity of spurious sheep, denominated justly *mongrels*, yielding a wool of little value, that could not be compared with the cleaner and stouter wools of Australasia. The two kinds of fleeces show, in fact, the different treatment by which they are produced. Life in the free air and constant pasture, upon the one hand; on the other, the precarious food, the filth and stench of close yards, to which most of our French flocks are to this day exposed. The depreciation of the wool of the *mongrels* cannot stop even at its present point, for the product of Australasia must go on

increasing under the continuance of peace, and the progress of marine intercourse, which tends to draw closer the communion of nations—as close as that of provinces in the middle ages. But if the wool of our *mongrels* bears small promise of future profit, those sheep have certainly little to recommend them in point of mutton, which retains the taint of their origin.

* This disfigured foreign race, then, is in the same case with the old native races of our ancient France that have withstood better than she herself has done the endless revolutions of which she has been the sport. These breeds satisfied the simple requirements of our ancestors, but in our days you might as well try to restore the coarse clothes worn by those ancestors and the frugal life which they led, as propose to satisfy the demands of our manufacturers and the wants of our increased population from breeds with coarse wool and unthrifty frame, subsisting miserably on the spontaneous produce of soils either naturally barren or ill-cultivated.

Many causes thus naturally led our farmers to crossing with English breeds: first, the deplorable state of our old French breeds as to both mutton and wool; next, the imperfection as butcher's animals of the Merino *mongrels* which have replaced the old breeds wherever the goodness of the soil and excellence of the forage allowed their introduction. Besides, a certain amount of enlightenment had evidently penetrated the minds of our farmers, which we must hope will lead to improvement in the feeding and management of French sheep. For hitherto these valuable animals have been, and still are, on most of our farms, treated as mere outcasts. They are crowded together without light or air in hovels which are rendered unwholesome by the fermentation of the droppings accumulated under their inmates perhaps for a year. In summer they receive only the natural produce of the soil; in winter, straw, and that straw often damaged. Even this fodder often does not hold out, and then the flocks have no other resource than to gnaw the heath and shrubs with which the commons are covered, or scratch in the snow to find some blades of withered grass. On this sad but true picture a ray of light has at last been shed. In many places our farmers begin to perceive the need of improved management, and, wherever improvement begins in the management, it is soon found to be also required in the breed. The only merit of the old breeds is that they are not destroyed by such management, but they will not pay for more generous diet.

For it is a mistake to improve the flock without changing the management. It is an equal mistake to improve the management without refining the breed. Both should advance together if profit be looked for.

Still it has been found that our old breeds may be crossed with English blood not only without profit, but with heavy loss. To clear up this matter, it will be worth while to enter into particulars, as the question is interesting, and in general not well understood.

When an English ram of whatever breed is put to a French ewe, in which term I include the *mongrel* Merinos, the lambs present the following results. Most of them resemble the mother more than the father; some show no trace of the father; a very few represent equally the features of both. Encouraged by the beauty of these last, one preserves carefully the ewe lambs among them, and, when they are old enough, puts them to an English ram. The products of the second cross, having 75 per cent. of English blood, are generally more like the father than the mother, resembling him in shape and features. The fleece also has an English character. The lambs thrive, wear a beautiful appearance, and complete the joy of the breeder. He thinks that he has achieved a new cross-breed insuring great improvement, and requiring thenceforth only careful selection to perpetuate by propagation among themselves the qualities which he has in view. But he has reckoned without his host. For no sooner are the lambs weaned, than their strength, their vigour, and their beauty begin to decay as the heat of our summer increases. Instead of growing, they seem to dwindle; their square shapes shrink; they become stunted, and, on the threshold of life, put on the livery of old age. A violent cold in the head completes their exhaustion. This is accompanied with a copious flow of slimy mucus from the nostrils, constant sneezings, and sometimes cough. At last the constitution gives way, or, if the animal last till autumn, the malady indeed ceases but he remains stunted for life. The time lost was the time of growth, and cannot be recovered, for nature never goes backward. Henceforth he looks like a foreigner escaped from the mortal influence of an inhospitable climate, and remains inferior even to our native sheep, which at least have health and hardiness in their favour.

The experiment has sometimes been tried with English rams in a third generation, and the symptoms above described have arisen even more strongly in proportion to the stronger admixture of English blood. Thus experience has shown us

that English sheep of whatever breed, being formed under the peculiar circumstances of Great Britain, require absolutely the continuance of those circumstances to remain what they are. These circumstances, again, we have found, cannot be realised in France without infinite precautions, and an expenditure that destroys the most indispensable of all requisites in such operations, namely, profit.

It is, moreover, remarkable, that the results described arise equally with each kind of English ram that has been used, namely, Leicester, New Kent, and Southdown. Only the foreign influence is more marked in the product of Goord's New Kent or of the pure Southdown than in that of the Leicester or the less pure New Kents or Downs; in fact the principle of antiquity or purity of race is what has most influence upon crosses.* The Leicester and other rams of mixed origin being of very modern origin in comparison with our French breeds, and especially with the Merinos, whose source is lost in the night of ages, their influence must be, and is in fact, weaker than that of the mother. This difference of action, which should be clearly understood, establishes shades of distinction distinctly marked according to the kinds of ram that are used.

Thus, if you put a Leicester ram, a mixed New Kent, or a Southdown, that is not pure, to a pure ewe of any French race, very little English character is impressed on the offspring, never less than when the ewe is a pure merino. In this last case it often happens that you can see no difference between lambs that are Leicester merinos, Kent merinos, or Southdown merinos, and another lamb of the same age which is pure merino. In compensation, however, for this feeble influence of the English sire, the lambs of such first crosses have no more difficulty than French lambs in getting over the first summer.

If on the contrary the same ewes are put to very pure rams of the Southdown or New Kent breed, the English character is more marked than in the former cases. These facts agree with the principles we have just referred to.

In both cases the offspring is reared; for lambs in which the English blood does not exceed one-half seem to be reared as easily as pure French lambs. But then, since little improvement is obtained, one is tempted to give a new dose of English blood—to put the Anglo-French ewes to English rams—whereupon the disasters described are sure to follow. These are truths which should be generally known, for they

* Consult on this subject the excellent work of Mons. Hurard, '*Des Haras Domestiques*.'

are purchased at a great cost of time and money. In fact, if one wishes to procure a breed of sheep such as is now wanted, good for the butcher, of early maturity, with power of laying on fat, above all hardy and economical, one is daunted by the length of time required for such an operation, if it is to be effected by gradually improving one of our native races through selection, food, and management. One turns from such an undertaking to what seems the easier road of crossing. For this purpose one looks naturally to the English breed, because they alone in the world possess the qualities sought for. We cross therefore our French ewes, suppose with the English race earliest known in France, the Leicesters, and obtain lambs showing little improvement. Disappointed we turn to a fresh breed, the New Kents, of recognised excellence. We obtain a degree of improvement more perceptible yet insufficient. Discouraged by these trials in which years have been wasted, tempted almost to despair, one hears of another breed, the Southdowns, as a race hardier and smaller than the other two, and therefore apparently better suited to French farming. One makes this last effort, which answers worse than the others; for if the Southdown rams exert an influence in the cross as strong as that of the New Kents, and rather stronger than that of the Leicesters, the effects are less advantageous, inasmuch as these rams are inferior in shape and in wool.

I must here remark, that in France we are in error respecting the Southdown breed. These animals are smaller than the Leicesters and New Kents, and therefore more easily satisfied. They are at home upon short pastures, and thrive where other breeds would perish. This quality seems invaluable to the French farmer, who is accustomed to cultivate no crop (either grasses or roots) for his sheep, and hopes to find an animal that will live and even fatten on nothing. An animal therefore which, as he hears, lives in England on the bare and parched heights of the downs, seems to him much likelier for his purpose than those balls of fat and of wool which roll lazily as they fatten in the rich valleys of Kent or Leicestershire. He would be right if any pure English race could thrive in France, but of this experience has shown the impossibility.

This fact being established, we can consider English breeds only with a view to crossing. Now as in crossing one gains but in part the good qualities of the sire, we require, if the improvement be sought from the sire, that he be of the most perfect type, that so his influence may be greater, but his influence will be the less both on shape and on wool in pro-

portion as in those points he comes nearer to the mother who is the base of the operation. By employing, therefore, Southdown sires which are relatively inferior in those points, we obtain less improvement than by blending with either of the other two English breeds, while the difficulty remains the same in rearing the lambs if we go beyond the first cross. Still it may be said, you have not exhausted the subject by your many and various trials with the three English breeds of which you have spoken. The further question arises in looking for the new animal we require, namely, whether some French breeds be not better suited for the purpose than others, whether the ill-success of your experiments have not arisen from imperfect mothers rather than from sires known to be perfect. But these trials have in fact been made with different French breeds, yet with uniform disappointment.

While one is varying these experiments with rams of various English breeds and ewes of various French breeds, years roll on and time slips away. No one of course can expect to solve such a question in the space of one life without making many such trials at once. Hence arises a complication of care and of facts to be registered with exactness, if one hopes to reach the light through so many dark and narrow passages. It is on this difficult ground that the writer has laboured for many a long year, acting on opinions the most erroneous, led by the most varying opinions, subject to mortifying mistakes, often losing almost every ray of hope, and on the point of giving up all result from so much anxiety, so many journeys, and so much expense. But it often happens that the human mind harasses itself long in search of a thing which might have been found easily by acting scrupulously upon laws of nature that were already known, instead of groping in the dark among accidental circumstances.—*Journal of the Royal Agricultural Society.*

(To be continued.)

MANAGEMENT OF DAIRY CATTLE. 1854 to 1856.

By T. HORSFALL.

ON entering upon a description of my treatment of cows for dairy purposes, it seems pertinent that I should give some explanation of the motives and considerations which influence my conduct in this branch of my farm operations.

I have found it stated, on authority deserving attention, that store cattle of a fair size, and without other occupation, maintain their weight and condition for a length of time, when supplied daily with 120 lbs. of Swedish turnips and a small portion of straw. The experience of the district of Craven, in Yorkshire, where meadow hay is the staple food during winter, shows that such cattle maintain their condition on $1\frac{1}{2}$ stone of meadow hay each per day. These respective quantities of turnips and of hay correspond very closely in their nutritive properties; they contain a very similar amount of albuminous matter, starch, sugar, &c., and also of phosphoric acid. Of oil—an important element, especially for the purpose of which I am treating—the stated supply of meadow hay contains more than that of turnips. If we supply cows in milk of average size with the kind and quantity of food above mentioned, they will lose perceptibly in condition. This is easily explained when we find their milk rich in substances which serve for their support when in store condition, and which are shown to be diverted in the secretion of milk.

In the neighbourhood of towns where the dairy produce is disposed of in new milk, and where the aim of dairymen is to produce the greatest quantity, too frequently with but little regard to quality, it is their common practice to purchase in calving cows; they pay great attention to the condition of the cow; they will tell you, by the high comparative price they pay for animals well stored with flesh and fat, that condition is as valuable for them as it is for the butcher; they look upon these stores as materials which serve their purpose; they supply food more adapted to induce quantity than quality, and pay but little regard to the maintenance of the condition of the animal. With such treatment, the cow loses in condition during the process of milking, and when no longer profitable, is sold to purchasers in farming districts where food is cheaper, to be fattened or otherwise replenished for the use of the dairy-keeper. We thus find a disposition in the cow to apply the aliment of her food to her milk, rather than to lay on flesh and fat; for not only are the elements of her food diverted to this purpose, but to all appearance her accumulated stores of flesh and fat are drawn upon, and converted into components of milk, cheese, or butter.

As I am differently circumstanced, a considerable portion of my dairy produce being intended for butter, for which poor milk is not adapted, and as I fatten not only my own cows, but purchase others to fatten in addition, I have

endeavoured to devise food for my milch cows, adapted to their maintenance and improvement, and with this view I have paid attention to the composition of milk. From several analyses I have selected one by Haidlen, which I find in publications of repute. Taking a full yield of milk, 4 gallons per day, which will weigh upwards of 40 lbs., this analysis assigns to it of dry material 5·20, of which the proportion, with sufficient accuracy for my purpose, consists of—

	lbs.
Pure casein	2·00
Butter	1·25
Sugar	1·75
Phosphate of lime	} 0·09
Chloride of potassium	
And other mineral ingredients	. . . . . 0·11
	<hr/> 5·20

It appeared an object of importance, and one which called for my particular attention, to afford an ample supply of the elements of food suited to the maintenance and likewise to the produce of the animal, and that, if I omitted to effect this, the result would be imperfect and satisfactory. By the use of ordinary farm produce only, I could not hope to accomplish my purpose. Turnips are objectionable on account of their flavour; and I seek to avoid them as food for dairy purposes. I use cabbages, kohl rabi, and mangold wurzel, yet only in moderate quantities. Of meadow hay it would require, beyond the amount necessary for the maintenance of the cow, an addition of fully 20 lbs. for the supply of casein in a full yield of milk (16 quarts); 40 lbs. for the supply of oil for the butter; whilst 9 lbs. seem adequate for that of the phosphoric acid. You cannot, then, induce a cow to consume the quantity of hay requisite for her maintenance, and for a full yield of milk of the quality instanced. Though it is a subject of controversy whether butter is wholly derived from vegetable oil, yet the peculiar adaptation of this oil to the purpose will, I think, be admitted. I had, therefore, to seek assistance from what are usually termed artificial feeding substances, and to select such as are rich in albumen, oil, and phosphoric acid; and I was bound also to pay regard to their comparative cost, with a view to profit, which, when farming is followed as a business, is a necessary, and in any circumstances an agreeable accompaniment.

I think it will be found that substances peculiarly rich in

nitrogenous or other elements have a higher value for special than for general purposes; and that the employment of materials characterised by peculiar properties for the attainment of special objects has not yet gained the attention to which it is entitled.

I have omitted all reference to the heat-supplying elements—starch, sugar, &c. As the materials commonly used as food for cattle contain sufficient of these to effect this object, under exposure to some degree of cold, I have a right to calculate on a less consumption of them as fuel, and consequently a greater surplus for deposit as sugar, and probably also as fat, in consequence of my stalls being kept during winter at a temperature of nearly 60 degrees.

I now proceed to describe the means I am using to carry out the purposes which I have sought to explain. My food for milch cows, after having undergone various modifications, has for two seasons consisted of rape-cake 5 lbs., and bran 2 lbs. for each cow, mixed with a sufficient quantity of bean-straw, oat-straw, and shells of oats, in equal proportions, to supply them three times a day with as much as they will eat. The whole of the materials are moistened and blended together, and after being well steamed, are given to the animals in a warm state. The attendant is allowed 1 lb. to $1\frac{1}{2}$ lb. per cow, according to circumstances, of bean-meal, which he is charged to give to each cow in proportion to the yield of milk, those in full milk getting 2 lbs. each per day, others but little: it is dry and mixed with the steamed food on its being dealt out separately; when this is eaten up, green food is given, consisting of cabbages, from October to December, kohlrabi till February, and mangold till grass time. With a view to nicety of flavour, I limit the supply of green food to 30 to 35 lbs. per day for each. After each feed 4 lbs. of meadow hay, or 12 lbs. per day, is given to each cow; they are allowed water twice per day to the extent they will drink.

As several of these materials are not commonly used as food, I may be allowed some observations on their properties. Bean-straw uncooked is dry and unpalatable; by the process of steaming, it becomes soft and pulpy, emits an agreeable odour, and imparts flavour and relish to the mess. For my information and guidance I obtained an analysis of bean-straw of my own growth, on strong and high-conditioned land: it was cut on the short side of ripeness, but yielding a plump bean. The analysis by Professor Way shows a percentage of—

Moisture	14.47
Albuminous matter -	16.38
Oil or fatty matter	2.23
Woody fibre	25.84
Starch, gum, &c.	31.63
Mineral matters	9.45
<hr/>	
Total	100.00

In albuminous matter, which is especially valuable for milch cows, it has nearly double the proportion contained in meadow hay. Bran also undergoes a great improvement in its flavour by steaming, and it is probably improved in its convertibility as food; it contains about 14 per cent. of albumen, and is peculiarly rich in phosphoric acid, nearly 3 per cent. of its whole substance being of this material. The properties of rape-cake are well known; the published analyses give it a large proportion (nearly 30 per cent.) of albumen; it is rich in phosphates and also in oil. This is of the unctuous class of vegetable oils, and it is to this property that I call particular attention. Chemistry will assign to this material, which has hitherto been comparatively neglected for feeding, a first place for the purpose of which I am treating. If objection should occur on account of its flavour, I have no difficulty in stating that by the preparation I have described I have quite overcome this. I can easily persuade my cattle (of which 60 to 80 pass through my stalls in a year), without exception, to eat the requisite quantity. Nor is the flavour of the cake in the least perceptible in the milk or butter.

During May, my cows are turned out on a rich pasture near the homestead, towards evening they are again housed for the night, when they are supplied with a mess of the steamed mixture and a little hay each morning and evening. During June, when the grasses are better grown, mown grass is given to them instead of hay, and they are also allowed two feeds of steamed mixture. This treatment is continued till October, when they are again wholly housed.

The results which I now proceed to relate are derived from observations made with the view of enabling me to understand and regulate my own proceedings.—*Journal of the Royal Agricultural Society.*

THE CATTLE PESTILENCE.

The Central Society of Agriculture of France.

“The sitting of the 22d of April was wholly occupied with a communication from M. Renault, Director of Alfort, and which exclusively absorbed the attention of all present.

In a previous sitting, M. Pommier had called the attention of the members to a letter published in the *Times*, and which proclaimed in alarming terms the reappearance of the contagious typhus, which periodically ravages the countries of Northern Europe. And besides this, the measures adopted by the English Government to prevent the introduction into the United Kingdom of cattle, hides, bones, or any animal matter whatever, coming from Russia, Prussia, and Mecklenburg-Schwerin, imparted a character of authenticity to the fears expressed by the *Times*.

M. Renault asks whether these fears are well founded, and if we ought really to trouble ourselves about the reports circulated respecting the contagious typhus.

There was one categorical way of replying, once for all, to these questions; and that was by giving the history of this terrible disease; and M. Renault is better qualified than any other person to afford this information, having been twice sent by the French Government to inspect the district in which the *epizootic* prevailed.

M. Renault first and foremost declares that there is no cause to be alarmed at the ravages of this malady.

Twelve years ago the contagious typhus made a great noise in France; we saw it rapidly approaching towards us: it was reported to be in Belgium, and even in Alsace. The press, the Chamber of Deputies, and the Government were seriously excited about it. A Commission, consisting of Messrs. Yvart, Inspector-General of the Veterinary Schools, Renault, Director of Alfort, and Imlin, Veterinary Surgeon of Strasburg, were sent into the North of Europe.

On arriving at Brussels, the Commission certainly found the country almost appalled, but it was only with the reports which had been spread in France. The Commission took the line of our eastern frontier by following the Rhine, and were met there by one deep feeling of astonishment at the fears which we had manifested. On approaching the east the Commission did not perceive the least trace of uneasiness.

Wurtemberg and Bavaria, it is true, held themselves upon their guard, but they had not yet adopted any measures of prevention.

It was only at Vienna that the Commissioners could find any traces of the scourge. They learned that the typhus had that time taken its rise in the Russian steppes, where it was still making great ravages; and that it was during the summer of 1844 that it had introduced itself into Gallicia, and had progressively extended towards the west, with the large droves brought by commerce to the great fairs of Olmutz, from whence it had spread itself, by the dispersion of the animals purchased there, into a great part of Moravia, Lower Austria, and Bohemia. The butchery of the Austrian States, in fact, slaughter annually about 100,000 head of the race from the steppes; and it is by this means that the disease penetrates into the country. But on the arrival of the Commissioners it was rapidly decreasing in Moravia, and quite extinct in Lower Austria; whilst, temporarily stopped in Bohemia, it had re-appeared there afterwards with fresh virulence. These gentlemen repaired thither at once, and were soon able to give an account of the causes of this relapse of the evil.

There is only one remedy employed against the typhus, and that is an absolutely efficacious one. Immediately that the disease is declared in a country, they surround the farm, the commune, or the canton infected, with a cordon of troops, with orders not to allow any of the bovine race to pass out; they then put to death and bury all the sick and even suspected animals; and at the end of some weeks the disease is stifled.

The typhus had entered Bohemia by Moravia. The veterinary surgeon sent by the Government had prescribed the ordinary means, and the disease had made no further progress, and had almost wholly disappeared. But some surgeons were desirous of making a post-mortem examination of the dead animals; and, from the internal injuries which they observed, they concluded that the disease was no other than abdominal typhus which we find amongst mankind, which originates spontaneously and has no contagious character.

This novel opinion, supported by names of considerable weight in the country, was rapidly disseminated. The faculty of Prague embraced this opinion, which favoured the possibility of the spontaneous rise of the typhus independent of the steppes, entertained by the French authors also who had written upon that disease; and the proprietors, who

always saw with regret the massacre of their cattle ordered by the veterinary surgeons, complained loudly. From the instant in which the disease was declared non-contagious, the *cordon sanitaire* and the sacrifice became an useless and ruinous measure. Prince Stephen, the Governor-General of Bohemia, was from that time led, if not to suspend, at least no longer rigorously to sustain, the execution of sanitary measures.

Immediately, the disease, which had been confined within a narrow space, invaded the whole of Bavaria, causing enormous ravages; and the Government of Vienna, placing but slight confidence in the discovery of the doctors, sent to the other districts affected the learned director of the Veterinary School of Vienna, with extended powers; and this person having stated and declared that the disorder was certainly the contagious typhus, the usual measures were re-established with great severity. The disease was instantly arrested, and rapidly disappeared. The French veterinarians, who arrived at the moment at Prague, on their return from Moravia, being consulted by the local government, had no hesitation in declaring themselves of the opinion of their brother surgeon, in approving the energetic resumption of isolation and slaughtering.

This epizootic of 1844-5, which destroyed a million of cattle in Russia, and caused considerable losses in Galicia, Moravia, Bohemia, and Lower Austria, did not enter upon any point into France, Saxony, or Bavaria, so near as were their frontiers, thanks to the sanitary measures prescribed by these several states, and enforced by them with great severity; which is a further proof of what cannot be too often repeated, that the typhus is not an epizootic developing itself like the scab, cholera, or plague, under epidemic influence or any medical constitution whatever, but a disease extending itself, and only capable of extending itself by means of *contagion*, which all the observations made up to this day tend to establish by the most conclusive evidence.

This is a truth so much the more important to repeat, in that it follows from it that a country threatened might always secure itself against it by closing up all the avenues of contagion.

Some years later—in 1856—we again entertained fears, in France particularly, in consequence of the Great Exposition. M. Renault and M. Imlin returned into the east of Germany. There they stated, after having pushed their investigations into the heart of Hungary, that the epizootic had been devastating that country ever since 1849. It had been intro-

duced there by the Russian armies, coming from Wallachia by Transylvania. It was in 1854 that the disease was at its height; and yet even then it was not spoken of in France. When, in 1856, they began to be terrified, it was closed up in a single circle—that of Buda—and seemed about to disappear.

The Hungarian race of cattle do not engender the typhus. The disease is solely due to the race of the Russian steppes; and it has reigned so long in Hungary only in consequence of the difficulty they labour under in adopting sanitary measures in a country still groaning under the consequences of a terrible war, and in which the Administration experiences great difficulty in organizing itself. The war had in a few days introduced the typhus into Hungary; but it requires a prolonged peace to root it out from thence.

In spite of the nearness of the infected countries, the contagion, thanks to the measures taken at the frontier, had not been able to enter Austria; and yet the slaughter-houses of Vienna never cease a single instant from drawing their supplies from Hungary, taking care, however, to admit into Austria only cattle coming from non-infected districts, and proved to be healthy. As to those suspected, they destroy them at the frontier, cut them up there, and convey the meat to Vienna in closed carriages, having that special service.

We have, therefore, no reason to fear the invasion of this terrible scourge. It takes its origin in the steppes of Russia. The states which separate us from those countries know the certain means of arresting the evil in its passage. Sanitary measures are enforced as soon as the danger is proclaimed, and executed with severity. The frontiers are guarded carefully, and if it is judged necessary to suffer animals to pass, healthy in appearance, but coming from a suspected country, the drove is not allowed to deviate from a passage specially marked out and completely isolated.

In the course of this same journey, Messrs. Renault and Imlin have stated that, at the same time, the cattle pest made great ravages in Poland, where it had been conveyed in 1855 by infected droves, brought by Jewish merchants to supply the corps of Russian troops, dispersed in many of the fortresses of that great province. It has ever since been established and maintained there, in consequence of the absence of sanitary arrangements; and in spite of the vigilance exercised upon the whole line of the Prussian frontier, it had penetrated into the Duchy of Posen, where it had invaded two villages; and into the province of Königsberg, in which thirty-four villages were infected. Immediately, however,

that the Prussian local authorities were informed of it, the disease had been circumscribed to its central point, and suppressed by the immediate slaughter of the diseased or suspected animals, and by the isolation, during a sufficient period, of the villages that had been infected.

M. Renault was assured that during this epizootic of Hungary, the states of Poland, Austria, and Prussia, had alone taken precautions; whilst Bavaria, Saxony, and the other German states had not considered it necessary to take any for themselves.

In order to show the facility with which the epizootic is detected as soon as it commences, and may be suppressed at once in Prussia, M. Renault explained the way in which the sanitary veterinary service is organized, and usefully worked in that country. And he adds that, in Prussia, the diseased animal, declared by the owner, is slaughtered and paid for a third of its value. If the animal has not been declared, not only the proprietor receives no indemnity, but he is condemned in a heavy penalty. The price of suspected animals, which it is judged proper to sacrifice, is paid in full. The indemnities are levied beforehand by the State upon the proprietors, according to the number of animals possessed.

In some parts of Galicia, Messrs. Renault and Imlin have visited districts in which, without the intervention of the State or local administration, similar measures are agreed upon and executed by the proprietors of cattle spontaneously; and in case of the sacrifice of diseased or suspected animals, they assess themselves in the same proportions.

We shall mention further, as a point of interest, the following fact stated by M. Renault. At different periods, inoculation has been held up as an excellent means of preserving cattle from the typhus, or, at least, of rendering it very mild. In this last epizootic, a large proprietor and cultivator in the neighbourhood of Posen wished to make trial of it, and of 100 cows inoculated *the whole died*. We consider the experiment as sufficiently conclusive not to be tempted to renew it.

M. Renault has finished this interesting communication, by demonstrating the weakness of the fears of England, in the actual state of the typhoid epizootic in Europe. In his estimation the measure taken by the British Government has no serious foundation. The disease which prevails at this moment in Holland, Hanover, Mecklenburg, and Denmark, is the pleuro-pneumonia; which also is found in France, and from which Great Britain is herself far from being exempt.

As to the typhus, it is neither more nor less to be feared now in England than it was one, or two, or six years ago; since there are few years in which it does not prevail in Poland, or in some part or other of Russia in the neighbourhood of the Baltic, so as to be at any moment prevalent in parts far enough removed from the provinces of Southern Russia, from whence English commerce obtains so many hides and so much tallow. Now England has not for a long period adopted sanitary measures against animal productions of Russia; and yet those productions have not imported the bovine plague amongst the English cattle. M. Renault is convinced that the English administration, when better informed, will soon rescind the rather precipitate measures it has recently adopted.

Finally, he adds that this measure is so much the less considerate as it is now proved that tanned leather, hides dried in the air, and melted tallow, the produce of animals infected with typhus, have never imported the disease.

We regret being unable to give more than an analysis, necessarily incomplete and distorted, of the clear and elegant extempore address, which during an hour captivated the attention of the assembly.

M. Yvart has completed the communication of M. Renault, by adding some new details, and by a spirited critique on an official note of the English Government, in which they have given the premonitory symptoms of the disease, which are nothing more than an inexplicable mélange of the symptoms of three or four very different disorders."

(Signed)

VICTOR BORIE.

Farmer's Magazine.

THE URARI, OR ARROW-POISON OF THE INDIANS OF GUIANA.

By Sir ROBERT H. SCHOMBURGK, Ph.D.

(Continued from p. 465.)

M.M. Cl. Bernard and Pelouze, on opening the animals poisoned by the curare, with which they experimented, found the blood always black, difficult to coagulate, and no longer "rutilant," by coming in contact with the air.

These observations, as far as it regards the state of the blood of animals killed by the curare, are entirely opposed to

those of Virchow and Münter, who expressly state that after empoisonment with urari, the coagulation of the blood occurs just in the same manner as in animals killed by mechanical means. On dissecting a rabbit killed with urari, at the moment that the beating of the heart was no longer sensible, it showed nowhere any accumulation of blood, neither in the smaller nor in the larger veins.

The blood procured from the heart itself was quite fluid, without change in its colour, coagulating in a few minutes, just like the blood from slaughtered animals.

These appearances are perfectly in accordance with the investigations which were carried on, as stated in the 'Annals of Natural History,' (loc. cit., p. 423), by Dr. Franz, Mr. Sewell, the well-known veterinary surgeon of London, and M. Desenis, of Berlin. The healthy appearance of the vital organs and of the blood after the empoisonment, induced me to observe, that with regard to medical jurisprudence this poison proved to be the more dangerous, as, should it be employed for sinister purposes by man against his fellow-creature, it would be difficult to state at a post-mortem examination the real cause of death. In some of the rabbits on which I tried experiments while in London, Dr. Franz found rather a larger quantity of blood in the brain and the spinal cord than usual.

MM. Bernard and Pelouze make the very important observation, that having applied the poison to the pulmonary mucous membrane, it had the same effect by absorption as if it had been brought in contact by incision with the cellular tissue.

Does this not agree with the observation made by Virchow and Münter, that death occurs not so much as a direct result of the empoisonment, but as the consequence of the interrupted respiratory movement?

The 'Journal de Pharmacie et de Chimie' for August last, contains a report by M. Reveil, to the Société de Pharmacie of Paris, of the Pharmaceutical Substances at the Universal Exhibition. M. Reveil makes some further interesting observations on the arrow-poison; nevertheless, they are mixed with the old superstitious accounts of its preparation and effect. M. Reveil quotes the statement of M. Boussingault, made before the Académie des Sciences, that the curare which he brought with him from the Amazon did not contain any snake-poison.

He repeats former observations, that the action of the curare had great analogy with the venom of snakes; for example, it might be taken innocuously into the stomach,

but in other points it differed from it, for the curare did not produce an inflammation of the wound, which, if caused by snake-poison, produces, almost instantaneously, considerable inflammation.

His statement that the curare may be taken inwardly, or received in the stomach without danger, has hitherto been the adopted opinion. I have mentioned already, in the 'Annals of Natural History,' that while suffering under a tertian ague, during my first expedition in the interior of Guiana, and our quinine having fallen short, I took the urari poison in small doses inwardly. Humboldt relates that the Indians considered it an excellent stomachic, but as I found that it did not remove my fever, and my friend and travelling companion, the late Captain Haining, having warned me repeatedly against this practice, I desisted.

Some years afterwards my brother, Otto Schomburgk, made at Berlin several experiments with the urari poison. Amongst others was the following: He administered to two cats the urari in like quantities; to the first by incision, to the other inwardly by the mouth; to the third he applied by incision a like quantity of strychnia. The convulsions caused by having placed the urari to the incised wound stood not in comparison to the tetanus and trismus produced by the strychnia. The former exhibited much more a gradually falling asleep than violent convulsive affections.

The cat, in the wound of which urari poison had been introduced, died after eleven minutes; the other, poisoned by strychnia, after twelve minutes; and the one to which the poison had been administered inwardly, in seventeen minutes.

The death of the latter took place under the same symptoms as produced by bringing the poison in contact with the blood. On dissecting the animal, the stomach and the duodenum were found in their whole extent coloured with the poison. He could not discover a wound in either of the organs conducting to the stomach, or in that part itself.

In order to substantiate the result, which my brother obtained by giving the poison inwardly, it requires numerous repetitions.

The cat may have had some excoriation, if not exactly a wound, by which the blood came in contact with the poison. It is, however, sufficient to caution against the internal use of urari in its concentrated state. But it is well known that with such poison, more or less weakened, the Indians mostly kill their game. This refers to the thick-skinned tapir, to the fleet deer, the agile monkey, as well as to the largest or

the smallest bird. Even the wild cattle which roam over the savannahs of Pirara and Fort San Joaquim are secured in that way. Without that, the meat of the animals thus killed prove injurious to those who partake of it. On the contrary, the employment of urari in killing the animal renders the meat more tender; and following the example of Father Zea, the missionary who accompanied Humboldt up the Orinoco, we killed, during the Guiana expedition, the fowls which we purchased from the Indians, and which usually were uncommonly tough, by means of a poisoned arrow, rendering thereby the flesh more tender.

I must not omit to mention the experiments made by Mr. Sewell, who, viewing the lock-jaw in horses as the result of irritation, conjectured that if a horse in tetanus were poisoned by urari, which acts by suppressing nervous power, and life was then to be restored by artificial respiration, the nervous system, on reanimation taking place, might possibly be free of the original morbid irritation. Reasoning thus, Mr. Sewell tried the following experiment: "A horse suffering from tetanus and lock-jaw, the mouth being too firmly closed to admit the introduction of either food or medicine, was inoculated on the fleshy part of the shoulder with an arrow-point coated with urari poison. In ten minutes apparent death was produced. Artificial respiration was immediately commenced, and kept up for four hours, when reanimation took place; the animal rose up, apparently perfectly recovered, and eagerly partook of hay and corn. He unluckily was too abundantly supplied with food during the night. The consequence was over-distention of stomach, of which the animal died the following day, without, however, having the slightest recurrence of tetanic symptoms."

Mr. Waterton conjectured that the application of urari poison might prove successful in cases of hydrophobia. However, the experiments of recovering animals which had been killed with urari by tracheotomy, have not always succeeded; indeed, only in the smaller number of cases.

It is therefore evident that the urari, in the present state of our knowledge of its effects, could only be resorted to in the greatest extremity as a remedy against hydrophobia, and under all circumstances, only where there is no other hope of recovery.

It becomes, however, now a question of the greatest importance to society, should that dangerous poison be employed for criminal purposes, how is it to be discovered that such was employed? The wound by which good urari is communicated to the blood shows no inflammation; nor is

it necessary that it should be a large flesh-wound, an arrow with the finest point, or a needle coated with concentrated poison may be sufficient to destroy life.

How startling is the assertion of Dr. Heintz, that three milligrammes of the poisonous extractive matter which he obtained killed a rabbit in seven minutes !

Under such an aspect it is certainly of the greatest importance that our best chemists should institute a more searching inquiry into the nature of the urari, how its application may be discovered and its effects counteracted.

The assertion of Mr. Reynoso, that chlorine and bromine are antidotes, ought to be tested by a series of experiments, not only with the best urari poison, but likewise by extracts obtained by scientific means from the bark of the *Strychnos toxifera* and other species of plants belonging to that genus.

So many years have elapsed since I left British Guiana, that I scarcely know to whom to apply to procure good Macusi urari; but I am persuaded, if those who wish to occupy themselves with such an interesting research were to address themselves to the Royal Agricultural and Commercial Society of British Guiana, or to Dr. Blair, or Dr. Dalton at Demerara, their application would be successful, and that useful institution, or the scientific gentlemen just named, would exert themselves to procure the true Macusi poison.

I mention it as of great importance to obtain, at the same time, the pure bark of the *Strychnos toxifera*, in order to ascertain, by scientific investigations in Europe, the active principle which I am persuaded is contained in the *Strychnos toxifera* in the highest degree, though other species of that genus may possess it more or less.

“A fine chemical and physiological investigation remains to be accomplished in Europe on the toxiques of the New World,” stated Humboldt forty years ago. Unfortunately, but little advance has since been made in that direction, and the same important desideratum remains still to be accomplished.—*Pharmaceutical Journal*.

PARLIAMENTARY INTELLIGENCE.

EXTRACTS FROM MINUTES OF EVIDENCE OF THE “SELECT COMMITTEE ON THE SHEEP, &c., CONTAGIOUS DISEASES PREVENTION BILL.”

(*Examination of Mr. J. B. Simonds continued from p. 471.*)

47. Explain to the Committee how you propose to discover those unfortunate animals?—I think that farmers

should be called on to return their losses of cattle and sheep from all diseases and accidents. As I have written a note here, perhaps I may be allowed to read it:—"Farmers should return their losses of cattle, sheep, and pigs from all diseases and accidents at certain intervals, and from contagious diseases immediately on their occurrence, by filling up prepared forms; these might be sent to the Board of Guardians, and forwarded through the Poor Law Commission to the Board of Trade."

48. You propose this, that if a farmer who was in possession of a large herd of cattle found that a case of pleuro-pneumonia or other infectious disorder existed in his herd, that then he should immediately publicly inform the Board of Guardians of the fact, and place himself, his farm, and his cattle in quarantine?—I think so.

49. Now do you think that any such clause inserted in any Act of Parliament would be likely to receive the sanction of the legislature? are you aware that on the question of agricultural statistics there has been great diversity of opinion and objection?—Perfectly.

50. Do you not think that a far greater objection would be taken by a farmer to announce to the whole world that he had what some people might call an infectious disease among his cattle than to tell the public what number of cattle he had in his fields?—I think not; I have always found farmers most ready to communicate any losses they may sustain from disease.

51. Now suppose a man has many hundreds of store cattle (and the case with regard to pleuro-pneumonia is stronger with regard to store cattle than it is with regard to fat cattle), and a large fair is approaching at which this gentleman is obliged to sell the greater portion of his store cattle; do you mean to tell the Committee, that that man could be forced to proclaim to the public the existence of a contagious disease among those cattle, and so deteriorate the value of 100 or 150 head of cattle 50 or 60 per cent?—I do not suppose that an individual under such circumstances would make such a declaration; but I think that any Bill which is to limit the effect of pleuro-pneumonia would be inoperative, unless you deal with that man's animals as infected animals. If he is allowed to send those animals into the market, and to communicate disease to other animals, all legislation will be inoperative.

52. Can you tell the Committee how a farmer could be made to state publicly the existence of disease among his herd, when the effect of that declaration would be to deter-

riorate the value of his cattle at the ensuing fair 50, or 60, or 70 per cent., because nobody would buy store cattle of a man whose herd he knew to be infected by disease?—Just so; but I was speaking generally with regard to my knowledge that farmers have been ready to communicate the state and condition of their cattle, and I can imagine individual cases, such, for example as you have drawn, where there might be great difficulty in the way.

53. Are you really acquainted with country affairs and the buying and selling of cattle?—Perfectly so.

54. And do you not know of your own knowledge that the great endeavour of a man who has a contagious disease among his store cattle must be to conceal it from the public?—His interests are unquestionably involved, presuming he is compelled to sell those animals; but I hold that very frequently a man is not compelled to sell those animals; and I hold that legislation should be to prevent a man selling animals under such circumstances.

55. Suppose this case, which frequently occurs in Ireland, that people keep their store cattle up to a certain time of the year, that is, up to winter, when they must either sell them, or let them starve; do you think that a man under those circumstances would be likely to tell the Board of Guardians that his cattle were affected with disease?—It is impossible for me to say what a man would be likely to do, as it is an unfortunate position for a man to be placed in, that he has no food for a number of animals that are all in a state of disease: he has either to keep them under the circumstances until they die, or has to send them into a market to spread infection all over the country.

56. I do not say that all are diseased; I say one out of 150?—Then if this disease is a contagious disease, all that have been exposed to it may have the affection incubated in their system, and may go through the country, and spread the disease far and wide. I think the case which your lordship has put is a strong one to show the necessity for legislation on the subject.

57. We were alluding to the legislation which you propose, and the possibility of enforcing it. As to fat cattle, you stated that in the early stages of pleuro-pneumonia the meat is not affected?—Just so.

58. Is there not a great deal of meat exposed for sale in the market affected with pleuro-pneumonia, which is fit for human food?—Unquestionably a great deal of the meat which is exposed for sale, and which is the produce of

animals slightly affected with pleuro-pneumonia, is fit to be used for food.

59. Would you exclude that from the market?—I would not exclude such meat from the market.

60. Do you not see that this Bill proposes to exclude it from the market?—I think a discretionary power must be left with inspectors of markets as to the condition of the flesh of animals killed labouring under such affections.

61. Would you have an inspector in every cattle-market?—An inspector should be appointed in all markets, and more particularly in London.

62. What powers do you propose to give him?—I would give him the power of seizing any animal which was found to be infected with disease. I do not know what connexion can be made to exist between the inspector of a market and the inspector of a slaughter-house, but there ought to be inspectors of slaughter-houses as well.

63. Do you propose to leave to this inspector to decide whether the beast is or is not fit for human food before it is killed?—I think that professional men should be appointed as inspectors of markets, and they are the only men competent to decide such matters.

64. Then you do not propose to exclude from markets all animals that are labouring under the incipient stages of disease, but only such animals as the inspector may think too bad to be killed?—I propose to exclude from markets all animals that are labouring under a contagious disease, in any of its stages, but it is possible that under the best regulations some diseased animals may yet find their way into the market.

65. Will you describe the different symptoms of pleuro-pneumonia, beginning with its early stage?—The early symptoms are not, as I have before observed, very easily recognised. They may sometimes consist of a little staring of the coat, a very slight cough, and a fastidious appetite; and these indications of disturbed health may show themselves more particularly at one period of the day than another. For example, in the first part of the morning, supposing the animals are at pasture, you will find that they are standing under the hedge, and not feeding so well as they will when the sun gets up; they will then be mingling with the herd, and apparently in good health; or if animals are in sheds, we observe that at the first outset of the disease we have but little more evidence of their being affected than a slight cough. As the disease advances, and the rapidity of its advance may be governed by many secondary causes;

take as an example the case of a cow which becomes infected in one of the London dairies. This animal is living with a number of others, in a low building, very badly ventilated, and kept in a dirty and filthy state. Such causes predispose the animals to this disease, as well as to many others, and those causes also hasten on such affections as pleuro-pneumonia to a fatal termination. The disease would proceed much more rapidly under such circumstances. Then we should find, in what may be called the second stage of the disease, that a difficulty of breathing exists, that the appetite is lost, the cough more frequent, the pulse increased, the coat staring, and so on. In a still later stage of the disease, the breathing would become still more laboured and difficult, and the surface of the body would be irregular in its temperature. For example, the horns and the ears and legs would be cold, while other parts of the body would be warm. Rigors will now and then show themselves, the pulse will become more frequent, and the animal be found to grind its teeth, as an expression of pain, and moaning, as another expression of pain. The bowels at this stage of the disease, become not infrequently irregular, and in fact diarrhœa sets in, and in the still later stages of the disease the food which is in the stomach goes into a state of fermentation. The animal becomes tympanitic, the bowels more irregular, the body deadly cold, the pulse nearly indistinct and rapid, and in this condition it dies.

66. Are you able to state the various symptoms from day to day?—I have stated, that supposing the animal is exposed to such causes as would hasten on the disease, all that I have just narrated may take place in the course of a week or so. In other cases, where the animal is not exposed to such causes, it may linger on for a fortnight, three weeks, or a month.

67. Now, in the early stages to which you have alluded, the staring coat, and the like, would it not be very difficult for an inspector to say whether such an animal was or was not suffering under pleuro-pneumonia, or merely from the effects of cold?—Yes, certainly, it would be difficult.

68. Would not over-driving and a sudden chill give very much the same appearances that present themselves in beasts that are suffering under the early stages of pleuro-pneumonia, namely, the loss of appetite, the staring of the hair, and the general appearance of cold?—Causes of that kind might give rise to a state of the system which would have some analogy to the symptoms in the early stages of pleuro-pneumonia.

(To be continued.)

THE VETERINARIAN, SEPTEMBER 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

THE ANNUAL MEETING OF THE ROYAL AGRICULTURAL SOCIETY.

AMONG the hundreds of free institutions of which we can boast in this free country, there are few which can be named as holding a more prominent position, and fewer still which are so intimately connected with our national prosperity as "The Royal Agricultural Society of England." It is gratifying to observe that, year by year, while its usefulness extends, more persons are ready to bear testimony to its worth, and to give it all the support in their power.

We believe that it has passed that fiery ordeal of public criticism and reaction in men's minds which all institutions are liable to; and not only that it has come out unscathed, but that it is even far more vigorous and healthy for the trial it has undergone. Nothing short of this, however, was to be expected, when we reflect on the sound and liberal basis on which it is erected, and the continued devotedness to the cause of Agricultural Science which stamps the proceedings of its executive council. The meeting of the Society at Chelmsford last year was considered a triumphant one in the good which was achieved, but this was accomplished at a great loss to its funds. This year the meeting at Salisbury has surpassed all which have gone before it, and we believe that the balance-sheet will show a large sum on the creditor's side. Some idea may be formed of the deep interest the public takes in its annual exhibitions by the fact that on the Tuesday, the first day of the opening of the implement-yard, in accordance with the regulations of the Society, 969 persons paid for admission at 2s. 6d. each; and on the following day no less than 2623 entered the yard,

each paying the same sum. On the same day also, as soon as the judges of the cattle had made their award, 1312 persons paid 5s. admission fee to the cattle-department. On Thursday, when the whole exhibition was thrown open, 14,004 entered the yard, paying 2s. 6d. each. And on Friday, which is the visiting day for those whose interests are not so immediately identified with the Society's proceedings, as well as for the labouring classes, 18,439 paid for admission at 1s. each. Thus it will be found that 57,347 persons visited the Show, each possibly to carry to his home some fact which, in his mind, either showed the advanced position of Agriculture, or of the great efforts which are being made to cement the union more closely which now exists between "Practice and Science."

We subjoin a list of the awards without special reference to the different classes or to individual animals, and that for the reason that in the opinion of all real judges there never were fewer animals which did not give evidence of the care bestowed in their breeding, feeding, and general management to bring them as near to perfection as it is possible to attain.

SHORT-HORNED CATTLE.

Judges: John Wright and William Bartholomew.

CLASS 1. *Bulls under four years old.*—£30 to W. Stirling, M.P., of Keir, Dumblane, Perth; £15 to J. H. Langton, of Sarsden House, Oxon.

CLASS 2. *Yearling Bulls.*—£25 to F. H. Fawkes, of Farnley Hall, Otley; £15 to J. W. Brown, of Uffcott, Swindon.

CLASS 3. *Bull Calves.*—£10 to Stewart Majoribanks, of Bushy Grove, Watford; £5 to Richard Booth, of Warlaby, Northallerton.

CLASS 4. *Cows in Milk or in Calf.*—£20 to Lieut.-Col. Towneley, Burnley; £10 to Lieut.-Col. Towneley.

CLASS 5. *Heifers in Milk or in Calf, not exceeding three years old.*—£15 to James Douglass, of Athelford Farm, Haddington; £10 to Richard Booth, of Warlaby, Northallerton.

CLASS 6. *Yearling Heifers.*—£10 to Lieut.-Col. Towneley; £5 to Richard Booth, of Warlaby, Northallerton.

HEREFORDS.

Judges: G. W. Baker, J. Tanner Davy, and W. Symonds.

CLASS 1. *Bulls under four years old.*—£30 to Edw. Williams, of Lowess Court, near Hay, Brecon; £15 to Philip Turner, of the Leen, Pembridge, near Leominster.

CLASS 2. *Yearling Bulls.*—£25 to Edward Price, of Court House, Pembridge, near Leominster; £15 to Richard Hill, of Golden Hall, near Shrewsbury.

CLASS 3. *Bull Calves*.—£10 to Lord Bateman, Shobden Court, near Leominster; £5 to Thomas Rea, Westonbury, Pembridge.

CLASS 4. *Cows in Milk or in Calf*.—£20 to Lord Berwick, of Cronkhill, near Shrewsbury; £10 to Mrs. Palmer, of Mudford, near Ilchester.

CLASS 5. *Heifers in Milk or in Calf, not exceeding three years old*.—£15 to Richard Hill, of Golding Hall, near Shrewsbury; £10 to Philip Turner, of the Leen, Pembridge.

CLASS 6. *Yearling Heifers*.—£10 to Earl of Radnor, Highworth; £5 to Lord Berwick.

DEVON CATTLE.

CLASS 1. *Bulls under four years old*.—£30 to James Davy, of Flitton Barton, near South Molton; £15 to John Bodley, of Stockley Pomeroy, near Crediton.

CLASS 2. *Yearling Bulls*.—£25 to James Wentworth Buller, M.P., of Downs, near Crediton; £15 to John C. Halse, of Molland, near South Molton.

CLASS 3. *Bull Calves*.—£10 to James Quartly, of Molland House, South Molton; £5 to H.R.H. the Prince Consort.

CLASS 4. *Cows in Milk or in Calf*.—£20 to James Quartly; £10 to ditto.

CLASS 5. *Heifers in Milk or in Calf, not exceeding three years old*.—£15 to Edward Pope, of Great Toller, near Dorchester; £10 to James Hole, of Knowle House, near Dunster.

CLASS 6. *Yearling Heifers*.—£10 to James Quartly; £5 to William Muggings Gibbs, of Bishops Lydeard, near Taunton.

CHANNEL ISLANDS CATTLE.

CLASS 1. *Bulls*.—£10 to Alexander Elphinstone, of Chuten Glen, Christchurch.

CLASS 2. No competition.

CLASS 3. *Cows in Milk*.—£5 to H. C. Compton, of the Manor House, Lyndhurst.

CLASS 4. *In-calf Heifers, under three years old*.—£5 to James Beckingham, of Dell Farm Church, Oakley, Hants.

CLASS 5. *Yearling Heifers*.—£5 to L. P. Maton, of Maddington, Devizes.

OTHER ESTABLISHED BREEDS.

(Not including the Short-horn, Hereford, Devon, or Channel Islands Breed.)

CLASS 1. No competition.

CLASS 2. No competition.

CLASS 3. *Cows in Milk or in Calf*.—£10 to Thomas R. B. Cartwright, of Aynho, near Brackley, Northampton.

CLASS 4. No competition.

CLASS 5. *Heifers in Milk or in Calf under three years old*.—£5 to Rev. Morton Shaw, of Rougham Rectory, near Bury St. Edmunds.

HORSES.

Judges: William Dickinson, J. H. Bland, Samuel Watts, and John Booth.

AGRICULTURAL HORSES GENERALLY.

CLASS 1. *Stallions for Agricultural Purposes, foaled on or before the 1st of January, 1855*.—£30 to T. B. T. Hildyard, of Flintham Hall, near

Newark; £20 to William Baker and Son, of Bury Farm, Stapleford, Cambridge.

CLASS 2. *Stallions for Agricultural Purposes, foaled in 1855.*—£20 to Samuel Clayden, of Little Linton, Cambridgeshire; £10 to William Wilson, of Baylham Hall, near Ipswich.

CLASS 3. *Mares and Foals for Agricultural Purposes.*—£20 to Samuel Wolton, jun., of Kesgrave, near Woodbridge; £10 to Samuel Wrinch, of Great Holland, near Colchester.

CLASS 4. *Two-year-old Fillies, for Agricultural Purposes.*—£15 to William Long, of Amesbury, Wiltshire; £10 to Samuel Wrinch.

DRAY-HORSES.

CLASS 1. *Stallions foaled on or before the 1st of January, 1855.*—£15 to William Buller, jun., of Hanwell Fields, near Banbury.

CLASS 2. *Stallions foaled in the year 1855.*—£10 to Lord St. John, of Melchbourne, near Higham Ferrers.

CLASS 3. *Mares and Foals.*—£10 to James Rawlence, of Bulbridge Wilton, near Salisbury.

CLASS 4. *Fillies foaled in the year 1855.*—Prize withheld.

OTHER HORSES.

CLASS 1. *Thoroughly bred Stallions for getting hunters.*—£30 to Thomas Groves, of Plompton Hall, near Knaresborough; £20 to Thomas Manfield, of Thirkeby Bridge, near Thirsk.

CLASS 2. *Stallions for getting hackneys.*—£20 to James Godwin Allington, near Devizes.

CLASS 3. *Brood Mares for breeding hunters.*—£20 to Thomas Fraser Grove, of Seagry House, near Chippenham.

CLASS 4. *Brood Mares for breeding hackneys.*—£15 to John B. Starky, of Spy Park, near Chippenham, Wilts.

SHEEP.

Judges: Thomas Twitchell, Charles Stokes, and William Tindall.

LEICESTERS.

CLASS 1. *Shearling Rams.*—£25 to W. Sanday, of Holme Pierrepont, Nottingham; £15 to ditto.

CLASS 2. *Rams of any other age.*—£25 to ditto; £15 to ditto.

CLASS 3. *Pens of five Shearling Ewes of the same flock.*—£20 to ditto; £10 to ditto.

SOUTH-DOWN, OR OTHER SHORT-WOOLLED SHEEP.

Judges: W. H. Beauford, E. Trumper, and H. Fookes.

CLASS 1. *Shearling Rams.*—£25 to Jonas Webb, of Babraham, near Cambridge; £15 to Jonas Webb.

CLASS 2. *Rams of any other age.*—£25 to Jonas Webb; £15 to Jonas Webb.

CLASS 3. *Pens of five Shearling Ewes of the same flock.*—£20 to Henry Overman, of Weasenham, near Rougham; £10 to ditto.

SHORT-WOOLLED SHEEP.

(Not qualified to compete as Southdowns.)

CLASS 1. *Shearling Rams*.—£25 to George Adney, of Harley, near Much Wenlock, Salop; £15 to William Humfrey, of Oak, Ash Chaddleshworth, near Wantage, Berks.

CLASS 2. *Rams of any other age*.—£25 to Samuel Meire, of Castle Hill, Much Wenlock, Salop; £15 to George Adney, of Harley, near Much Wenlock.

CLASS 3. *Pens of five Shearling Ewes of the same flock*.—£20 to W. B. Canning, of Chisledon, near Swindon; £10 to W. R. Shittler, of Bishopston, near Salisbury.

LONG-WOOLLED SHEEP.

(Not qualified to compete as Leicesters.)

Judges: Henry Beevor, John Clarke, and E. L. Franklin.

CLASS 1. *Shearling Rams*.—£25 to William Lane, of Broadfield Farm, Northleach, Gloucester; £15 to William Lane.

CLASS 2. *Rams of any other age*.—£25 to Edward Handy, of Sierford, near Cheltenham, Gloucester; £15 to William Garne, of Aldsworth, near Northleach.

CLASS 3. *Pens of five Shearling Ewes of the same flock*.—£20 to William Garne; £10 to William Lane.

PIGS.

Judges: Henry Thurnall, J. Unthank, and B. Swaffield.

CLASS 1. *Boars of a large breed*.—£10 to John Harrison, jun., of Heaton Norris, near Stockport; £5 to Joseph Tuley, of Truewell Farm, near Keighley, Yorkshire.

CLASS 2. *Boars of a small breed*.—£10 to George Mangles, of Givendale, near Ripon, Yorkshire; £5 to Lieut.-Col. Charles Towneley, of Townley Park.

CLASS 3. *Breeding Sows of a large breed*.—£10 to William Hewer, of Sevenhampton, near Highworth; £5 to John Harrison, jun., Heaton Norris.

CLASS 4. *Breeding Sows of a small breed*.—£10 to H. Watson, of Bolton Park, near Wigton, Cumberland; £5 to Thomas Crisp, of Butley Abbey, near Woodbridge, Suffolk.

CLASS 5. *Pens of three Breeding Sow Pigs, of a large breed, of the same litter, above four and under eight months old*.—£10 to George Bowes Moreland, of Abingdon, Berks.

CLASS 6. *Pens of three Breeding Sow Pigs of a small breed, of the same litter, above four and under eight months old*.—£10 to R. H. Watson, of Bolton Park.

SPECIAL PRIZES.

Given by the Local Committee at Salisbury.

HAMPSHIRE DOWN SHEEP.

Judges: George Brown, T. Ferris, and Joseph Blundell.

CLASS 1. *Shearling Rams*.—£20 to William Humfrey, of Oak Ash, near Wantage; £10 to William Humfrey.

CLASS 2. *Rams of any other age*.—£20 to William Humfrey; £10 to Stephen King, of Old Hayward Farm, near Hungerford.

CLASS 3. *Pens of five Ram Lambs*.—£20 to John T. F. Pain, of North Houghton Manor, near Stockbridge; £10 to Robert Coles, of Middleton Farm, Norton Bavant, near Warminster.

CLASS 4. *Pens of five Shearling Ewes*.—£20 to W. Browne Canning, of Chiseldon, near Swindon, Wilts; £10 to Edward Waters, of Stratford, Sub Castle, near Salisbury.

SPECIAL PRIZE.

Offered by M. Dutrone, of Sarlabot, near Trouseauville-Dives, Canton of Dozule, Department of Calvados, France.

Best Polled Bull of any age.—The Gold Medal to G. D. Badham, Sparrow's Nest, near Ipswich.

The only remark we shall offer in conclusion is, that we never heard fewer dissentients to the awards which were made by the judges, nor a more general expression of opinion, that from the superiority of all the animals exhibited, their task must have been a very difficult one.

We must, however, add to this that the Prince Consort travelled from town purposely to visit the Show, and that he spent a considerable time in the yard, and examined with much care and interest not only the animals, but everything else which was worthy of note.

The site chosen for the exhibition was a most picturesque one, and near to the time-honoured ramparts of Old Sarum, which never before had witnessed a scene so beautiful and so emblematical of peace and progress as the one they now looked down upon. It had been theirs to witness the belted knight and the pageants of war, as also the days of superstition and religious intolerance, and to retain for years, subsequent to their departure, a strong and iron grasp upon the rights, freedom, and independence of the people.

EXTRACT FROM THE ANNUAL REPORT OF ROYAL VETERINARY COLLEGE.

ON Saturday, July 14th, the annual general meeting of the members of this College was held at the Thatched House Tavern, St. James's Street.

Professor Spooner, principal of the College, read the report, which stated that the College was progressing most satisfactorily, and that the number of subscribers had increased as the institution had become more generally known.

With respect also to the number of the patients admitted into the infirmary, there had been a considerable addition to those of the last year; while the animals brought for daily inspection as to disease, and for examination as to soundness, had materially increased. The entrance of the pupils had likewise reached the average number.

The financial statement, prepared by Messrs. Begbie and Robinson, public accountants, for the past year, ending June 30, 1857, showed an excess of income over expenditure amounting to £432 4s. 6d.

The report was adopted, and some matters of minor importance having been discussed, the meeting separated.

Veterinary Jurisprudence.

BRISTOL COUNTY COURT.

(Before Sir J. E. Eardley Wilmot, Bart., Judge.)

GREENLAND v. HASKINS.

Mr. King for the plaintiff and Mr. Edlin for the defendant.

This was an action to recover £11 7s. 6d., the difference between the purchase-money of a mare, which, it was alleged, had been warranted, and the amount for which she was sold.

The plaintiff is a carrier between Bristol and Warmley, and the defendant a farmer, residing at the latter place. On the 19th of May, after numerous bargainings, the plaintiff purchased a mare of the defendant for £30 15s.; defendant warranted her to be sound, and said she was worth £40, and had no blemish. Plaintiff paid the money, and then asked for some paper, on which he wrote a receipt and a warranty, which he handed to defendant, who said he could not read, and gave it to his wife. She read it aloud, and the defendant said he could not sign that, but would warrant the mare to be sound, and his "word was as good as his bond." About a

week after the plaintiff had the mare, he fancied she went lame, and shortly afterwards he consulted Mr. Kent, who said the mare was unsound, and gave a certificate to that effect. Plaintiff then sent her to the repository, where she was sold for £21. He had paid Mr. Leigh £1 2s. for commission, and Mr. Kent 10s. 6d. for a certificate of the examination, which sum added to the difference between the purchase-money and that received for the sale, made up the amount claimed.

The plaintiff was cross examined by Mr. Edlin. He denied that he had purchased the mare because she was a strong one, and with the intention of making her do the work for which he had been accustomed to have two horses; drove the mare from Warmley into Bristol every day, but always had an extra horse to help up the hills; had worked the mare till the 8th of June; when he consulted Mr. Kent; the mare was sold on the 11th of June; Mr. Kent did not say the mare appeared to have been over-worked.

A witness named *Waters*, son of a farmer at Warmley, deposed that he had heard the plaintiff and defendant dealing for the mare at the Tennis Court, Warmley, and that the defendant warranted her to be perfectly sound.

Robert Radford, formerly ostler at the Castle and Ball, the house at which the plaintiff put up, deposed that he heard the parties trying to deal for the mare; the defendant said he would warrant the mare sound, and in every respect good in harness, and if that would not satisfy, he would give a written warranty.

William Stephens, a lad in the employ of the plaintiff, deposed that he was present with the plaintiff and defendant on the 19th May, when the settlement for the mare took place; the money was paid and some paper produced, upon which plaintiff wrote something; this was read by plaintiff's wife, upon which the defendant refused to sign it, but said he would warrant the mare sound.

By Mr. Edlin—Heard nothing else said.

Mr. Kent, veterinary surgeon, deposed that he had examined the mare and discovered that she was lame in both legs from a disease of the feet called the navicular disease, and also from wind galls between the suspensory ligament and the bone. There was likewise an enlargement of both knees from disease; the navicular disease must have existed some time. Mr. Kent added that he had brought some specimens of bones.

Mr. Edlin—I thought so; as my learned friend (Mr. Stone) said some time ago, that Mr. Kent was nothing without his bones. (Laughter.)

Mr. King said he would not go into the matter of the specimens, but would leave *Mr. Edlin* to do so if he pleased.

Examination continued—The navicular disease is one of slow growth and it must have existed before the 19th of May. The windgalls were also of long standing; the navicular disease is a proof of unsoundness and is incurable.

Cross-examined—Witness did not find all the horses he examined unsound; he gave more certificates of soundness than unsoundness; the navicular disease did not arise from a sudden concussion; he did not agree with the book which described it to be so; it could not have been written by a practitioner.

Mr. King—No; it was written by a barrister.

Mr. Edlin—Did not Baron Martin examine you from a book?

Witness—No, I would not allow him to do so; he mangled the evidencé of several others, but I would not allow him to mangle mine.—(Laughter.)

Mr. Edlin—I believe you agree with no books on the subject?

Witness—Yes, I do, but not when they are written by those who are not practitioners, and who know nothing about what they write.

Mr. Edlin having briefly addressed the Court, called

The defendant, who deposed that the plaintiff had wished to purchase the mare for a long time; defendant lent the plaintiff his mare for a trial, and he drove her into Bristol; on that day the van was so loaded that the defendant was afraid to go in it, and said if the harness were to break it would be all up; there were sixteen persons in the van; defendant and plaintiff were at the Castle and Ball on the 18th May, and some conversation took place between them respecting the mare; he did not warrant her, but he believed he did say the mare was sound; did not make use of the word warrant at all; did not say he would give a written warranty if plaintiff was not satisfied; on the 19th May, at the Tennis Court, plaintiff said, "You'll warrant the mare?" to which defendant replied, "No; you have had her and tried her, and know as much about her as myself;" plaintiff wished to give him the money for the mare, but defendant told him he had better come up to his house; he did so, and then plaintiff wrote something on the paper which was read by defendant's wife, and defendant, when he knew what it was, refused to sign it; he had never at any time warranted the mare; defendant had seen plaintiff driving the mare into Bristol; he sometimes had a horse to help him up the hill, but often not.

The defendant's wife deposed that she was present when the plaintiff paid for the mare; Mr. Greenland wrote something on a piece of paper, but upon her reading it to her husband he refused to sign it, saying "I shall do no such thing; I shall not warrant her for an hour, nor a minute." The money was paid after the refusal to sign the paper. Her husband said rather than sign it he would give the plaintiff 10s. and take back the mare; plaintiff said he did not do business in that way, paid the money and went away.

Cross-examined—There was no receipt on the paper, but merely a warranty.

Wm. Haskins, brother to the defendant, deposed that on the morning of the 19th, he was at his brother's house; Mr. Greenland was there about the mare; witness found there was a difference of only 10s. between them; his brother said he would not come down a penny, and witness offered to split the difference and gave his brother 5s., if the plaintiff would also come up 5s., and he agreed to do so. There was nothing said about a warranty.

Sampson Jefferies, a labourer at Warmley, deposed that he was present at the Tennis Court, Warmley, when the plaintiff and defendant were there dealing for the mare. Nothing was said about a warranty.

Mr. King replied, pointing out that the balance of testimony was in favour of the plaintiff, whose statement, corroborated as it was by other witnesses, was consistent with his conduct at the final settlement.

His Honour briefly reviewed the evidence on both sides; he said there were only two points to be decided. First, was the mare unsound, and secondly, whether at the time of sale, there had been a warranty. On the first point there could be no doubt, as the evidence of Mr. Kent was distinct and uncontradicted, and as to the second point, he thought the statement of the plaintiff more consistent with truth than that of the defendant, and, therefore, the verdict would be for the plaintiff for the amount claimed.

[With reference to this case, and the comments made on Mr. Kent's evidence, we have received from that gentleman the following letter, which sufficiently explains the particulars.]

DEAR SIRs,—I send you a Bristol newspaper, the supplement to which contains the report of a horse cause which has just been tried here. You will see that I am not very complimentary to books as witnesses in court.

The circumstance referred to by the Counsel took place at a trial at Liverpool in 1849.

Baron (then Mr.) Martin, having sadly mangled the evidence of Messrs. Ellis and Proctor, veterinary surgeons of Liverpool, by a reference to Youatt's book, 'The Horse,' when about to cross-examine me, began to turn over the leaves of the same book to look for his place, when, without his speaking to me, I said, "You may put that book down." He replied, "Do you speak to me?" I said, "I do, and that you may put the book down as it is no authority whatever." He added, "I suppose there is a book which is an authority, and if so tell me its title, and I will send for it." I replied, "If there be a book which is an authority it is for you to find it out and not for me to tell you; but I know of no book that is an authority, and I will not be booked." "Then I suppose," he said, "that you regard Messrs. Ellis and Proctor as authorities." "Ellis and Proctor are good authorities," I said; "but you with that book mangled their evidence in such a manner as I never witnessed before in a court of law. They would have given good evidence on the point at issue had you not used the book for the purpose of destroying their evidence, and in such a way that they did not know what they talked about; but you shall not mangle mine." I here stretched forth my hand and pointed at him; but said no more.

Serjeant Wilkins—"Then you think my learned friend did know what he was talking about?" "He certainly did; but his object was to confuse the witnesses and to mangle their evidence, and in this he succeeded."

Serjeant Wilkins—"I suppose you are authority, Mr. Kent?" "While I am in this box I will make it felt that I am authority" was my answer, "although out of it I may be no authority whatever."

Professor Dick was called by the opposite side, and made a great effort to set aside my evidence, but was not successful.

The case was one of tubercles and vomica of the liver. Professor Dick had heard me say that the liver weighed 27 lbs., was of a light clay-colour, and the texture such that it could not hold together to be weighed, except in a scale, beyond the edge of which none of it projected.

On this evidence the Professor told the judge that he founded his opinion, and stated that it was a case of active congestion of the organ, and might have had its origin within three days.

The result, however, was a verdict, founded on my evidence, for the plaintiffs.

You may use this and the report according to your own good pleasure.

Yours truly,

JOHN KENT.

MISCELLANEA.

TO PREVENT HORSE-FLIES ANNOYING HORSES.

IF a horse previous to being taken out of the stable be well sponged with a decoction of laurel-leaves about the head, loins, &c., it will be found to be a preventive to his being stung and annoyed with horse-flies, which are now very prevalent. The decoction is made by boiling the leaves in water for a considerable time. The more leaves that are used in proportion to the water, the more effectual it will be. The decoction should be carefully put away, as it is highly poisonous.—*Irish Farmer's Gazette.*

ARMY APPOINTMENTS.

7th Light Dragoons—Veterinary Surgeon J. Barker, from the 10th Light Dragoons, to be Veterinary Surgeon, vice Phillips, who exchanges.

10th Light Dragoons—Veterinary Surgeon J. G. Phillips, from the 7th Light Dragoons, to be Veterinary Surgeon, vice Barker, who exchanges.

Probationary Veterinary Surgeon Paul Anthony, to be Veterinary Surgeon, 11th Light Dragoons, vice Gloag, appointed to the Military Train.

APPOINTMENTS IN THE HON. EAST INDIA COMPANY'S SERVICE.

Henry Dawson, M.R.C.V.S.

H. J. Fitter, M.R.C.V.S.

OBITUARY.

We have to record the death of another young member of the Veterinary profession, Mr. E. J. Parsons, of Tiverton. His diploma bears date May 24, 1853. He died on Sunday, Aug. 16, from an attack of typhus fever.

We regret also to have to add to the list of the massacres in India, Mr. Edmund Chalwin, V.S., 1st Brigade of Artillery, Cawnpore.

THE
VETERINARIAN.

VOL. XXX,
No. 358.

OCTOBER, 1857.

Fourth Series,
No. 34.

Communications and Cases.

ON THE SOUNDNESS AND WARRANTY OF
HORSES. A REPLY TO MR. DICKENS.

By Mr. J. HAWTHORN, M.R.C.V.S., Kettering.

IN the *Veterinarian* for the past month a letter appears from Mr. C. Dickens, of Kimbolton, which contains so much relating to myself, that I feel bound to reply to his observations. I would first remark that I much wish all your correspondents would write in the same spirit as Mr. Dickens has done—for I cannot but think myself rather complimented than otherwise by him—and were this the case, we should look forward with pleasure to more frequent discussions in the pages of your journal than we are wont to do. I should not, however, like to see the *Veterinarian* a “milk-and-water” periodical; but I must confess myself an admirer of the *suaviter in modo*, as well as the *fortiter in re*.

I regret, with Mr. Dickens, that Mr. Gregory and other practical members of the profession have not written more on the subject of unsoundness, as I believe that much good might be done by such discussion, and the matter be brought into a narrower compass than it now occupies. A better feeling might be made to exist also between buyer and seller, and especially between the horse-dealer and the veterinary surgeon.

I have lately had some conversation with a large and respectable horse-dealer, in whose family, so to speak, that calling has long been hereditary, and it is his opinion that something might be done which would give satisfaction to all parties. The nature of that *something* must remain for the

future to define; but I am decidedly of opinion that an association should be formed, consisting of non-professional as well as professional men, so that existing difficulties might be smoothed down, and the subject of soundness or unsoundness be more clearly defined. I think that the opinion of eminent *non*-professional horsemen and dealers would have as great a weight in the settlement of this question as if the association were composed exclusively of professional men.

With respect to the case of corn alluded to by Mr. Dickens, I have always thought this disease when slight to be scarcely worthy of notice. The extravasation which produces the visibility of the corn is generally the result of instantaneous injury, and if this be of small amount, and is not repeated, the effused blood merely discolours the last-secreted thin layer of the horny sole. Such a case would be quite well after the next layer of horn was secreted, and with good common shoeing it would be heard of no more.

I have known horses returned for the existence of the merest film upon the transparent cornea, produced, perhaps, by the stroke of a whip, and which would be easily cured by the application of weak solution of lunar caustic, or any other equally simple treatment.

I think my friend Mr. Dickens was rather bold in treating so lightly the case of "enlarged spermatic cord, from an opening connected with which there was a slight discharge;" and I cannot consider the favorable issue of that case would justify its being so passed over. I remember a very bad instance of the kind, in which I had to open the scrotum, and to put the clams unto the cord as high up as I could get them, and then with the actual cautery to separate the diseased portion. Considerable hæmorrhage took place and much inflammation followed, which gave me a good deal of anxiety and trouble. Another horse had for some years a discharge from the scrotum, and was every year, in consequence of the chronic inflammatory condition of the parts, obliged to be laid up from work for two or three weeks at a time. Here, as my friend remarks, "*time was money.*"

I quite agree with Mr. Dickens that it would be better to do away with the warranty of horses altogether. I have heard of an eminent and successful dealer in London who used to buy all his horses on this principle, and never returned one, and few men made more money by their business. The opinion of the veterinary surgeon would be often in requisition even if this system prevailed.

I do not pretend to the same powers of illustration as Mr. Dickens, who is very happy also in his use of them; but I cannot quite agree with him about the case of *curb* in which he and I met in consultation. The curb was small, but then it had been observed *before* the ride he alludes to. Be it remembered that the *versio rerum* of different persons is often as varied as their number.

The warranty of horses is a ticklish matter, and opens a wide field for litigation. A friend of mine bought an old horse of a mail-coach proprietor, warranted sound and a *good worker*. This horse had worked in the mail for fifteen years from Uppingham to Oakham, a distance of seven miles out and in. He was sound, but the old rogue knew to a minute how long he had had to work at a time, and after this period had passed not an inch would he budge. He could not be returned as being unsound, but as not being a good worker. The seller received a sovereign or two, and therefore took him again.

With all due deference to Mr. Dickens, I do think the title of my paper was a happy one. It just expressed my opinion of the *hair splitting* of opposing veterinary surgeons in these cases. I also cannot agree with him that it is always "the duty" of the veterinary surgeon to point out the least deviation from health, or any abnormal development which he may detect. At any rate, if observed it ought to be neutralized, as it were, by the remark that it is of no importance; for on Mr. Dickens's plan there is an end of all attempts to settle matters in a more practical manner than has hitherto been done.

I am afraid I shall become more tedious than profitable by adding to this communication, and therefore I will at once conclude by expressing a hope that Mr. Dickens, Mr. Gregory, and a number of your other correspondents will continue the discussion on this subject, it being one I shall always feel much interest in.

CASE OF NASAL POLYPUS.

By T. HURFORD, M.R.C.V.S., 12th Lancers, India.

A SHORT time since, I was requested to examine a horse belonging to a gentleman of the turf, a very fine five-year-old gray Arab. I found a tumour filling the near nostril

so completely as to prevent any air passing to or from the lungs on that side. My opinion of any good being done was very unfavorable; but as the horse was young, it was thought that an operation for the removal of the polypus should be attempted. The case was seen by my friend, Mr. Western, who advised, however, that the animal should be shot. Notwithstanding these unfavorable opinions, the horse was subsequently cast for the operation. Within three minutes and a half he was under the influence of chloroform, when, assisted by Mr. George Western, who had just arrived here, and also by Mr. Shaw, I proceeded to make an incision through the skin so as to dilate the natural opening of the nostril, with a view of being able to grasp the tumour. This being done, I found it impossible to safely apply that amount of force which was necessary to detach it from its connections. I therefore removed with the knife all I could reach, and then sewed up the opening which had been made. Creosote lotion was used to the parts for a few days, when it was changed for one of the sulphate of zinc. A considerable discharge followed, and ulceration also of the Schneiderian membrane came on, so as to make the case assimilate one of glanders, and under these circumstances on the fourteenth day succeeding the operation, I had him shot.

On a *post-mortem examination*, we found that the neck of the polypus extended to the ethmoid bones, where it had a very firm and broad attachment, so that the entire length of the morbid growth could not have been less than fourteen inches. The part I removed weighed six ounces, and that which was found on opening the nasal cavity about three times that quantity, thus making the entire weight twenty-four ounces.

CASES OF ERYSIPELATOUS DISEASE OF THE SKIN.

By R. H. HOLLOWAY, M.R.C.V.S., 2d Madras Light Cavalry, Sholapore.

Case 1.—On 27th November last, D 58 troop horse was attacked with erysipelas. The ravages of the disease were principally confined to the head and extremities, being associated with very considerable œdema of those parts; while the neck, chest, and sheath also partook of the diseased action. The irritation was excessive, and the eruption was

speedily followed by the constant exudation of an acrid sero-sanguineous discharge.

Depilation ensued, and all four limbs were soon denuded of almost every particle of hair.

The tumefied eyelids excluded nearly every ray of light from the eyes. The lips also were enormously swollen, and thickly studded with eruptive vesicles.

Notwithstanding all this, the concomitant fever was not high, and the pulse did not indicate much constitutional disturbance.

The appetite was unimpaired, and the only apparent distress was caused by the incessant and annoying pruritus.

I commenced my *constitutional* treatment by prescribing a dose of cathartic medicine in combination with calomel, and subsequently to its operation I kept up a gentle action of the bowels. For this purpose, and with a view of acting also both upon the skin and kidneys, drachm doses of aloes with soap were given every evening, and an alterative powder, composed of Antim. Sesqui-sulph., Sulphur, and Potassæ Nitr., every morning. By these means, and the washing of the parts with warm water and soap daily, and sponging them as occasion required with an infusion of opium to allay the irritation, the horse rapidly recovered.

After convalescence, he was detained in the sick-lines during the growth of the hair, and was only discharged for on 11th January last.

Case 2.—C 23 troop horse was admitted on 21st April, 1857, with the same disease.

The symptoms in this case were more urgent, and blood-letting at the outset was had recourse to. Cathartic medicine was likewise given, and after a proper interval it was repeated. Subsequently alteratives, tonics, or diuretics were exhibited as occasion required. The diseased surfaces were cleansed and fomented, and suitable dressings employed, and the horse was enabled to return to duty on 1st June.

The perusal of a case by Mr. J. Carless, jun., in the June number of the *Veterinarian* for the current year, has induced me to record the foregoing.

I cannot but think, from the account given of this case, at page 322, commencing thus, "a considerable swelling of the extremities took place, accompanied with most extensive eruptions of the skin and falling off of the hair, &c.," that Mr. Carless has described, and with considerable accuracy, a case of erysipelas; although I can scarcely understand,

under the circumstances related, the "*circulation* remaining undisturbed."

Dr. C. Searle, in his 'Philosophy of Life and Health,' when treating of this complaint, makes the following just and excellent remarks:

"As I advocate in all cases attending strictly to nature's indications, and as erysipelas in the severer forms develops a blistered surface—that is, blisters are formed on the skin—I am of opinion, that in all cases in which relief is not obtained by perspiration, which should be early induced, if possible, by the conjoint influence of calomel, antimony, opium, and the vapour or the tepid bath, after due evacuation of the bowels, and bloodletting if there should be much excitement—a blister should be applied, not immediately on the part inflamed, but in its vicinity; the whole phenomena of the disease clearly evincing the presence of an acrid irritant in the blood, and a tendency to escape or pass off by the skin."

OPHTHALMIA IN CATTLE.

By H. WEBB, M.R.C.V.S., New Sampford.

IF you think the following brief description of, to me, a new disease, is worthy of being recorded in the pages of the *Veterinarian*, I shall be glad of its being inserted, as perhaps some of your readers may have seen similar cases, and be able to enlighten others as to the cause.

On the 27th August, I was requested to attend some cows and weanling calves, at Mr. H. Smith's, of Little Bardfield, which were the subjects of ophthalmia. The history of these cases is, that about six weeks previously, one of the cows was noticed to be suffering from inflammation of the eyes, and it being thought that it might probably proceed from an injury, little heed was paid to it. From that time till I saw them, several others became similarly affected, so that on my arrival I found fourteen out of seventeen calves, and eight out of ten cows, suffering from ophthalmia.

They all had been kept in a low pasture ground during the day, where there was plenty of shade and good water. At night the calves were housed in a clean, well-ventilated place, and had given to them a small quantity of meal. The cows, however, after being milked, were again turned out to graze.

The appetite of all the animals was good, and there was nothing to lead one to believe that the disease had a constitutional origin, but that the cases were simply inflammation of the eyes from some local cause. After a day or two, the acute inflammation subsided, and an opacity of the cornea was to be observed, with, in most cases, a distended or drop-sical condition of the globe of the eye in the centre. In the worst cases an appearance of the anterior chamber being distended with pus was present. Many of the animals are now getting better, but they will be some time before they quite recover their sight. Several had both eyes affected, but others only one.

The foreman told me yesterday (September 10th), that some bullocks that had been grazing with the cows had got the same complaint, but were not so bad as either the cows or calves had been. I understand that the same, or a similar disease, has shown itself this year in many places in Cambridgeshire.

[During the last five or six years, in particular, our attention has frequently been directed to this variety of ophthalmia in cattle. There is a good deal of mystery attending its invasion, and the records which we have preserved throw but little light on the causes, predisposing or exciting, on which it may depend. Upon the whole, calves and young stock are more often attacked than older animals, and this whether they are in sheds or at grass. The disease, as a rule, makes its appearance during the summer and autumnal months, although the attacks are not entirely confined to these periods. The subjects of it are also not exclusively such animals as are in full condition of body, or even those in the opposite state; both perhaps are equally liable. Breed seems to exercise no influence over it, nor does locality, in so far as the Midland and Southern parts of England are concerned. With the North, however, we are not sufficiently practically acquainted as to speak with decision on this point. The disease in the greater number of instances is confined entirely to one eye, the other remaining perfectly healthy. Its invasion is marked by a slight turgescence of the vessels of the conjunctiva, a little weeping of the eyes, and an intolerance of light. By the second day, an opaque spot, about the size of a split pea, and white in colour, appears in the centre of the transparent cornea. A close examination shows that lymph is now effused between the layers of which the cornea is composed. Very soon some of these layers give way, and generally those which are deep seated are the first to do so. This leads to a bulging

out in a conical form of the remaining layers, as covered by the conjunctiva. Vessels tinged with red blood, closely packed together run parallel with each other from the periphery of the cornea towards the central spot, where they disappear. Not unfrequently, the entire substance of the cornea either bursts or ulcerates, when fungoid growths will spring from the part, and the eye be lost. Even in such cases where this untoward result does not occur, blindness for the most part is produced. Neither preceding, nor during the progress of the affection, does the animal give any indication of constitutional suffering, and it would appear as if the disease owed its origin to some local cause.]

THE EMPLOYMENT OF CASTOR OIL AS A PURGATIVE.

By E. GIBBON, M.R.C.V.S., Upton.

I OBSERVE in the *Veterinarian* for August a communication from Mr. Armitage, V.S., Sheffield, on 'Purgatives and Clysters in the Treatment of Spasmodic Colic in the Horse,' and I feel desirous, while this subject is before the profession, to make a few remarks upon it.

When I first started on my professional career, I used to treat spasmodic colic with sedatives principally; but not finding them to answer my expectation, I soon got tired of such treatment, and determined to try the effect of purgatives, followed up, in cases where they were required, by powerful doses of sedatives. For this purpose I determined to give trial to castor oil as a purgative agent, although the professors of veterinary science do not hold out much encouragement for its employment for such a purpose. Having used castor oil before I entered the veterinary profession, in one or two cases, contrary to the opinion of two veterinary surgeons, and having seen good resulting from its employment, I was induced to regard it as a purgative agent in domesticated animals. Since entering the profession I have determined to give it a fair trial, and the result is, that I attach much value to it as a purgative agent both for the horse and the ox, in all cases of *real constipation* of the bowels. There is nothing equal to it for such cases; but in cattle I prefer aloes and sulphate of magnesia for ordinary purposes. I may say, however, that in exhibiting aloes you want to

give double the quantity to an ox that you would to a horse. I often give to an ordinary-sized cow or ox six or eight drachms of aloes with a pound of sulphate of magnesia. Castor oil also must be given in much larger doses to cattle than to horses—half as much more at the least.

I do not know that I have ever administered castor oil to the sheep, but I think it would have the same effect on that animal. I should only use it in cases of *real constipation*. In the pig I have employed it once or twice, and a good result has followed. In the dog, it is very uncertain in its action. The fatty nature of it induces vomiting in that animal, thereby deteriorating its value as a purgative. I prefer for the dog the compound rhubarb pill, as for the human subject, with a very small dose of oil two or three hours afterwards, when requisite.

Linseed oil I consider to be a very objectionable agent for the purposes I am writing about. Without multiplication of words, I may say that I have used castor oil with the greatest benefit; and I hope I may be able to persuade some unprejudiced practitioner to give it an impartial trial, and report the result of his experience of its use. It is now my first remedy in cases of colic. I do not care even if there be a slight tendency to inflammation in these cases, for I feel assured it will not aggravate it, even if the seat of the inflammatory action is in the mucous membrane of the alimentary canal, and I would much rather have to deal with a mechanical case, so to speak, of enteritis, than with a constitutional one involving the peritoneum.

As a common purgative I have not the slightest fear of the consequence of an over-dose of the oil producing superpurgation. I have had one or two cases of this kind, but there were no signs of inflammation attending them. They were left to nature, but of course were carefully watched. In one case the purgation continued for three days, when it ended perfectly satisfactory. Castor oil does not cause the same nausea that aloes does, and the animal, when suffering from the effects of it as a purgative, does not lose his appetite as from aloes. I do not, however, by these remarks wish it to be inferred that the oil is the best agent for common use. In fact I may state that, in the common way of physicking, I consider it is often an advantage to produce nausea, as thereby the action of the agent affects the nervous system generally through the medium of the stomach. My dose of castor oil is, for a full-grown cob, fourteen hands high, one pint, and for a large cart-horse from two to three pints. I often give it in cases

where a dose of aloes has been administered and has not operated in about thirty hours afterwards. I then give, without fear, half a pint to a pint and a half, depending on circumstances. I much prefer this plan to that of waiting a week and then exhibiting a second dose of physic. Of course, no one would think of giving a second dose of aloes quickly upon the first, unless it were wished to induce superpurgation; and who could wish to see this in the horse?

ON FISTULA OF THE WITHERS.

By the Same.

IN the August number also of your journal is an article headed 'Past and Present Treatment of Fistula,' by Actæon, who says that, "as a last resort in a case of fistula of the withers, I used the knife most unmercifully, removing about three pounds of organized fibrine, afterwards applying the hot iron to the indolent parts, repeating the cautery about every fourth day, and dressing the wound in the intermediate days with digestives." Further on he remarks, that "the iron has now usurped all other modes of cure in such cases."

This treatment is doubtless very efficacious, but I think that fistulous wounds are often to be cured without the use of the actual cautery. To speak at once to the point; if you can bring—and which is the great secret in curing fistula—your remedial agents in direct contact with the diseased parts, you can cure any fistula without the actual cautery. The way to do this is, not by merely syringeing the parts, but by thoroughly cleaning away the secreted matter from the sinuses before injecting the fluid. If you have a straight sinus to deal with, a probe with a piece of tow at its end will suffice; but if the sinus is curved, and some parts of it are out of reach, you must then use the knife to enable you to pass the probe to the bottom of it.

Some practitioners will doubtless say, why should we disagree about the treatment of a disease when the object can be obtained in either way? My reason for taking notice of "Actæon's" communication is, that I think the treatment of a wound appears in the eye of the public to be more scientifically and professionally managed, and certainly more humanely, when milder measures are employed. We should avoid, as a

rule, having recourse to the acts of barbarians or farriers of old. I myself should not hesitate to use the actual cautery if it were really required, or if I thought that it would inflict less pain and suffering than medicinal agents; but in most cases I am convinced to the contrary. It is impossible to fathom the bottom of every sinus with the actual cautery. The employment of the knife looks more scientific, and does not cause any pain as compared with the heated iron. Furthermore, I consider, as a general principle, that the employment of the hot iron in the treatment of wounds is derogatory to the members of a scientific profession. There are cases where the iron may be used judiciously, but they are few and very far between.

IMPACTION OF AN EGG IN THE ŒSOPHAGUS OF A MARE. DEATH.

By F. B. TAYLOR, V.S., Denbigh.

ON the 5th instant I was called to attend a cart-mare at Lleweny Hall, the residence of Richard Owen, Esq., which was simply reported to be ill. I found the patient standing with her head hanging down, and nearly touching the ground. A considerable defluxion was coming from her nostrils, and the mouth was filled with frothy mucus. She seemed anxious to take both food and water, but was totally unable to deglutate either. I carefully examined the throat, but could not detect anything to account for the symptoms. No pain or tenderness was evinced upon pressure, nor was any cough present. The breathing was likewise tranquil, but the pulse was somewhat increased. Thinking that the case might prove to be one of sore throat, I withdrew some blood, and vesicated the throat. I likewise ordered warm fomentations to be frequently applied to the neck. A mild cathartic ball was exhibited, but it was swallowed with difficulty. Beside these remedial means, some fever-medicine was left to be given at night.

The next day, there being no improvement, the blister was repeated, and now carried down to the chest. Some gruel was given, but as frequently as it was horned down it was returned through the nostrils. I again submitted the whole of the neck and throat to a strict examination, but could not detect any injury or enlargement in any part.

The mare did not appear to suffer much pain, notwithstanding which I gave the owner but faint hopes of her recovery. She continued in this state for several days, when death closed the scene.

I did not attend the autopsy; but the owner, anxious to discover the cause of her suffering, had her opened in his presence, and upon tracing the course of the œsophagus he found an egg firmly imbedded in the tube, a few inches before its termination in the stomach. Its shell was unbroken, and it entirely closed the passage. Subsequently it transpired that the egg had been given by the carter under the impression that it would improve the condition of the animal.

I send you a portion of the œsophagus with the egg *in situ*.

[Cases of this description are not very unfrequent. Here we have another instance of the sacrifice of an animal to the ignorance of a farmer's servant. The chief point of interest in the specimen was the position of the egg. It was lying with its long axis across the œsophagus, and was so firmly fixed as to prevent its being removed from its position unless it was first broken. We were, however, unwilling to do this, preferring rather to add the specimen in its perfect state to our collection.]

CAUSE AND CONSEQUENCES OF PARALYSIS;

WITH REFLECTIONS ON MR. SMALL'S CASES.

By J. STORRER, V.S., Turriff.

I SEND you the present communication under what I believe to be a very humble sense of duty. Indeed, I may say that I think myself, and other members of the profession, who have not given notice of the epidemics that prevail in our respective districts, have been somewhat negligent of our duty to the profession. The communication from Mr. M. Small, on Paraplegia, in your September number, has led me to make the foregoing remarks, as, from the general description of the symptoms which is given, I am led to believe that the disease is identical with one that has been very common in Aberdeenshire for eleven or twelve years past.

The first case narrated by Mr. Small is a worse one than

I have ever seen; for I do not remember to have lost a single horse from this form of staggers, although I have found it necessary to sling the patients very often. The other cases are only a *fac simile* of dozens that annually come under my notice.

The disease I believe to be primarily a derangement of the digestive functions, somewhat allied to "the stomach or sleepy staggers" of our old writers, but of a milder and much more tractable nature. In every case the appetite is ravenous, and the animal will eat almost anything that comes in his way.

In this part of the country these cases always occur in the latter part of June, or in July, according to the earliness or lateness of the growth of the grass. The malady never takes on an epidemic form except when the *rye-grass*—the only grass we grow here—is ripening its seed, and when the plants cannot be said to constitute either green succulent food, nor dry or well-made hay. It is far more prevalent in hot summers, when the animals are turned upon grass which is much scorched by the sun's rays. Besides this, the disease is of frequent occurrence among stall-fed horses, when the grass is cut and carried to the stables in the same state which I have described.

From these facts I am inclined to believe that the disease arises from the existence of some *narcotic or paralysis-producing principle* in the rye-grass when it is changing from the green to a dry state.

Having arrived at the probable cause of the disease, the treatment is at once plain—change the food either to perfectly green and succulent, or to thoroughly dry, and in a few days the animal will be better. I prefer, however, to give a purge, and here I may remark that in this disease an ordinary dose of physic will often act in ten or twelve hours, if green food be given afterwards. Occasionally it is necessary to keep the animal principally on bran mashes, and to give daily doses of sulphate of iron. I prefer this plan to the abstraction of blood, as the patients bear up badly against the loss of that fluid. Indeed, as a rule, bleeding greatly aggravates the symptoms, and often to an alarming extent. The eye may look less wild for an hour or two, and the staggering be even diminished for a short time; but assuredly the symptoms will return with fourfold more force. The horse that could stand before will either now tumble headlong to the ground with his neck bent under him, or he will go backwards, rear up, and fall heavily on his back or side in a trembling state of excitement. Two, three, or even four weeks' nursing after this will scarcely fit him for his work, while two or three days are

all which are required for his convalescence under good treatment.

If Mr. Small does not find on inquiry that his patients were similarly circumstanced as to food, I hope he will again refer to the subject, that we may learn if the diseases we are describing are identical.

COMMENTS ON MR. SMALL'S CASES OF PARALYSIS.

By JOSEPH TAIT, Portsoy.

I OBSERVE in this month's number (September) of your publication, some cases recorded by Mr. Small as a new epidemic among horses. The disease in question—want of nervous energy—has been very common in this part of the country for eleven or twelve years, more especially during the months of July and August.

The wonder is, that more of the narrated cases did not die under the treatment had recourse to. My friendly advice to Mr. Small would be, keep your lancet in your pocket, your physic in the drawers; give the patient plenty of *bruised* oats and hay, put him into a loose box, and keep all quiet; and in a few days he will be well.

SINGULAR CASES OF ŒDEMA OF THE HEAD.

By "A PRACTITIONER."

A SHORT time since I was called to attend a thoroughbred mare, labouring under the usual symptoms of strangles, accompanied with a copious discharge from the nostrils. Having adopted the necessary measures, all seemed to be going on right, when three days afterwards I was sent for in a hurry, the messenger stating that the animal was nearly suffocated. When I arrived, I found her labouring hard for breath; the pulse quick and weak, and the submaxillary gland much swollen. I at once performed tracheotomy, which gave immediate relief; I also stimulated the swelling around the gland. The next day the swelling had extended towards the eyes and lips, and much effusion had taken

place into the cellular tissue of the entire head. I freely scarified the parts, and ordered hot fomentations to be continually employed, but all was of no avail, as at the end of three days tetanus set in, and she died.

Case 2.—An aged cart-horse received a slight wound on the superior maxillary bone, around which there was a little swelling. Thinking not much of it, I was content to order fomentations to be applied, and to leave a mild digestive compound with which to dress the wound. On my next visit, I found the head enormously swollen, and the wound devoid of pus. The pulse was very languid, and the animal almost incapable of gathering his food, although he appeared very anxious for it. By the third day the swelling of the head was so great that the horse could scarcely hold it from the ground. I deemed this but another hopeless case, and on the next day I arrived only just soon enough to see him die in a state of coma.

Case 3.—This was one of a brown cart-horse, which had had a slight enlargement of the submaxillary gland for about two or three weeks prior to my attendance. I gave the horse an aperient, and followed it up by some diuretic medicine. After he had been under treatment a week, the head suddenly began to swell. The lips were so enormously engorged as to present a frightful appearance; the tongue also hung from the mouth. On puncturing the lips, &c., *straw-coloured* serum flowed freely from the incisions. He shortly died.

Besides the ordinary appearances, the sinuses of the head and areolar tissue presented a jelly-like condition from the amount of the effusion which had taken place.

Case 4 was one of the same disease, as a sequel to strangles.

Result.—Death.

Case 5.—A similar one, from a kick on the inferior maxillary bone.

Result.—Death.

Case 6.—Also a fatal one. The dropsy followed as a sequela of bronchitis.

GENERAL EMPHYSEMA IN A FOAL.

By the Same.

THE subject of this case was a cart-foal, two months old, which was taken unwell somewhat suddenly. On visiting him, the entire body was found to be puffed up with air, in a manner precisely similar to a calf which has been killed and blown by a butcher. A drum-like sound was emitted in whatever part the skin was struck. The pulse did not appear to be much disturbed, but the young animal could scarcely be made to move, or to put one leg before the other. The skin was hot, and the desire to take milk so little, that he would not even swallow it when put into his mouth.

The servant—a very clever fellow in his own estimation—gave me the following explanation of the phenomenon: “The wind,” he said, “had been blowing very high, and it had got into the colt either at one end or the other, and puffed him up; so that to cure him he must be tapped.”

The only clue I could obtain of the probable cause was, that the day before the mare had been worked very hard, kept several hours from her foal, brought home in a state of profuse perspiration, and then turned out. By these means the secretion of her milk was probably interfered with, and its quality also impaired; but in what way it produced emphysema in the foal, I must leave your physiological readers to unravel for their own edification.

The treatment which was had recourse to proved very efficacious; it consisted principally of friction to the skin, and the application of a stimulating lotion of moderate strength. Small doses of *Ol. Lini* et *Ol. Tereb.* were likewise given daily, and the young animal frequently drenched with his mother's milk. In little more than a week he was convalescent.

Facts and Observations.

STATISTICS OF DOMESTICATED ANIMALS IN FRANCE.

THE Minister of the Interior has addressed a circular to the prefects, directing that a general census shall be taken throughout the whole of France of the number of domesticated animals which exist in each department of the Empire. It is expected that this census will hereafter be taken in the first fortnight in December of each quinquennial period.

FILARIA BRONCHIALIS OF THE CALF.

WE learn that numerous cases of *Filariæ* in the bronchial tubes of calves exist in many parts of the country. An instance has just come to our knowledge in which thirteen well-bred calves, all belonging to the same person, died within a few days of each other from this cause. These creatures quickly multiply by the production both of living young and ova, a fact which is revealed by a microscopic examination. The irritation they excite in the mucous membranes leads to effusions which possess more or less a plastic character, and helps materially by its retention, within the bronchial tubes, to increase the difficulty of respiration and to produce ultimate suffocation. Terebinthinate compounds are very efficacious if early had recourse to, but in protracted cases they should be alternated with mineral tonics, of which the sulphate of iron is the best. We have also known the inhalation of diluted chlorine gas for two or three days in succession to effect the happiest result, especially if used as an adjunct to other remedies.

CASE OF POISONING BY YEW.

MR. THOMAS TAYLOR, M.R.C.V.S. Burton-on-Trent, informs us that he was requested on August 19th to make a post-mortem examination of a cart-mare belonging to the Earl of Chesterfield, which had died very suddenly that morning. On opening the chest the lungs were found

xxx.

to be congested but healthy, as was the heart, &c. The stomach and intestines were free from inflammation, but in the former was found a considerable portion of yew leaves and small branches of the tree. The condition of the mucous coat of the stomach was very peculiar. In places, this coat had a blanched appearance, and it could easily be detached by the end of the finger. The blood in all the vessels was very dark in colour, and a good deal of superficial congestion existed.

The only history which Mr. Taylor could obtain was that some boys had broken down the branches of the yew trees in the park into which the mare was turned; and that when she was taken to the stable in order to be put to work, she fell down as if she had been shot, and died instantly.

FARINACEOUS ALIMENT FROM STRAW.

“THE attention of agriculturists in France has recently been directed to the discovery of a method of converting straw into a kind of bran. This discovery is claimed by two individuals. The first, a miller, near Dijon, who, it is said, on trying the mill-stone of a new mill, discovered the possibility of converting straw into a nourishing food. The second, M. Jose Maitre, of Vilotte, near Chantillon.

“This sort of aliment is very excellent when combined with a sufficient amount of nutrimental matter, for animals whose systems lack the requisite amount of phosphates and phosphoric acids. A milch cow, for example, whose lacteal vessels yield in the form of milk the above equivalents, may be benefited by an occasional feed of straw meal.”

[We can understand that meal of this description, if used with judgment as to quantity, but perhaps more especially as to frequency, will tend materially to economise the food of both horses and cattle, without causing that impairment of the digestive and assimilative functions which so frequently attends the use of unprepared straw fodder.]

Extracts from British and Foreign Journals.

ON A METHOD OF OBTAINING IMMEDIATE FIXITY OF TYPE IN FORMING A NEW BREED OF SHEEP.

By M. MALINGIE-NOULE, Director of the Agricultural School of La Charmoise; President of the Agricultural Society of Loire et Cher.

Translated by the late Mr. PUSEY.

(Continued from page 518.)

Now, in all breeding, experimenters attach the greatest importance to purity of race on each side, because of the natural law by which the offspring resemble, not merely the father and mother, but sometimes the grand parents, great grand parents, and further back still. Many other observers as well as myself have seen in young animals the clearest resemblance to some ancestor long since dead who was marked by some distinctive feature. The purer the race of such ancestor, the more strongly do its characteristics overcome the subsequent mixture of breeds and imprint themselves on the new offspring: would it not then have been more reasonable for French farmers to attach the utmost importance to purity and antiquity of blood in the ram, (representing as he does the improved type that is aimed at) but to avoid on the other hand those qualities in the ewe whose defects were to be corrected? In giving motion to a projectile (for instance a cannon-ball) the velocity obtained is not merely in proportion to the propelling force, but also to the resistance of the medium (air or water for example) through which the body is driven. Now in our case the ram represents the power of propulsion, the ewe that of resistance: since, if there were no obstacle on her side, the complete effect would be realised by the faithful reproduction of the improving type. Clearly, therefore, the influence of the ram upon the offspring will be the stronger the purer and more ancient in the first place his own race may be; and in the next place, the less resistance is offered by the ewe through the possession of those qualities of purity and long descent which are so valuable in the sire. We have seen above, and it is true of every attempt at crossing in

France, that an opposite state of things had obtained in all these trials; since purity and antiquity of blood exist much more strongly in the French breeds than in the English, which have been much more recently formed. The imperfect result then of all these attempts is completely accounted for by our reversal of a great law of nature; and it seemed to me necessary to restore this law and give the advantage of it to the English ram. Such was the preliminary condition of success.

It appeared then that in order to untie the Gordian knot whose threads I have traced, inasmuch as one could not increase the purity and antiquity of the blood of the rams (I purposely repeat the first principles of the problem to be solved), one must diminish the resisting power, namely, the purity and antiquity of the ewes. With a view to this new experiment, one must procure English rams of the purest and most ancient race, and unite with them French ewes of modern breeds, or rather of mixed blood forming no distinct breed at all. It is easier than might be supposed to combine these conditions. On the one hand, I selected some of the finest rams of the New-Kent breed, regenerated by Goord. On the other hand, we find in France many border countries lying between distinct breeds, in which districts it is easy to find flocks participating in the two neighbouring races. Thus, on the borders of Berry and La Sologne one meets with flocks originally sprung from a mixture of the two distinct races that are established in those two provinces. Among these then I chose such animals as seemed least defective, approaching, in fact, the nearest to, or rather departing the least from, the form which I wished ultimately to produce. These I united with animals of another mixed breed, picking out the best I could find on the borders of La Beauce and Touraine, which blended the Tourangelle and native Merino blood of those other two districts. From this mixture was obtained an offspring combining the four races of Berry, Sologne, Touraine, and Merino, without decided character, without fixity, with little intrinsic merit certainly, but possessing the advantage of being used to our climate and management, and bringing to bear on the new breed to be formed, an influence almost annihilated by the multiplicity of its component elements.

Now, what happens when one puts such mixed-blood ewes to a pure New-Kent ram? One obtains a lamb containing fifty hundredths of the purest and most ancient English blood, with twelve and a half hundredths of four different French races, which are individually lost in the preponderance of

English blood, and disappear almost entirely, leaving the improving type in the ascendant. The influence, in fact, of this type was so decided and so predominant, that all the lambs produced strikingly resembled each other, and even Englishmen took them for animals of their own country. But, what was still more decisive, when these young ewes and rams were put together, they produced lambs closely resembling themselves, without any marked return to the features of the old French races from which the grandmother ewes were derived. Some slight traces only might perhaps be detected here and there by an experienced eye. Even these, however, soon disappeared, such animals as showed them being carefully weeded out of the breeding flock. This may certainly be called "*fixing a breed*," when it becomes every year more capable of reproducing itself with uniform and marked features. Such was my secret, which, however, has been made no secret at all, but has been declared from the first in my entries at the shows of Poissy and Versailles. Such is the origin of the La Charmoise breed of sheep.

We have already seen how important it is that you should not infuse into a new breed more than 50 per cent. of English blood, if you would preserve the French constitution, which alone suits the circumstances in which they have to pass their lives. The Charmoise breed not exceeding that proportion does retain the hardiness of a pure French race: the lambs are reared as easily as those of any French breed, getting over the summer just as easily: neither then nor later do they suffer more than our native breeds from heat or from drought.

The mixed-blood mothers had been formed from breeds in general small, and possessing the usual qualities of small breeds, delicacy of shape, smallness of the head and the bony structure, temperance as to food. The Merinos alone had not these valuable qualities, but they entered in the proportion of 25 per cent. only into the mothers, and consequently of $12\frac{1}{2}$ per cent. only into the offspring. Their disadvantage, too, in these respects was compensated by their influence on the fleece.

I may here remark that, in founding a breed, it is far better to choose ewes from small breeds, with the qualities already mentioned, than from breeds that are strongly timbered, bony, coarse, greedy, like those of northern and western France, which I tried myself, to my own heavy loss. Accordingly as fine or coarse ewes are used, so in proportion do the offspring show that coarse or fine character, difficult to describe by a writer, but easy to perceive by a connoisseur.

Besides, it is an admitted fact, that a sheep affording 112 lbs. of meat is more expensive to feed than two sheep, each of 56 lbs. Luckily, on this head the interest of our butchers, the taste of our consumers, and the profit of our farmers are all in unison. The weight generally preferred in France for sheep is 56 lbs. At this point it is easy to stop the Charmoise breed. I say stop them, because weight is one of the things which man can most readily increase or diminish in any breed; in fact, as the size of the being to be fashioned depends upon the ram, it will be produced similar to the sire, if no obstinate resistance of another fixed breed be opposed to it. It will then develop itself more or less in proportion to the food received by the lamb. It is not difficult, by increase of food, to double, or even more than double, the result. By feeding differently lambs born from similar parents, we have brought some to the dead weight of 75 lbs. at fourteen months, while others gave only 30 lbs. of meat at the same age. The weight of 56 lbs. may be taken as the mean between these two extremes.

In putting my small mixed-blood ewes, that weighed alive not above 56 lbs., to heavy New-Kent rams which weighed often 225 lbs., one apprehension alarmed me—the fear, I mean, of losing ewes which had cost so much trouble, when the time came for their giving birth to the large offspring one naturally expected. But no such danger arose; and the reason seems to me clear. Whatever be the size of the ram, the germ develops itself only in proportion to the nourishment it receives. Now, while it remains in the womb of the small ewe it obtains but little support; consequently the lambs remained small, and the births took place without difficulty. In 2000 labours we had but one death that was occasioned by the immoderate size of the lamb. It was curious to see such small offspring engendered by such huge sires. But these little creatures, if well fed, soon began to grow rapidly, and it was not uncommon to see ewes sucked by lambs larger than themselves.

From the first dropping of our lambs, the strongly marked English character gave us the greatest hope that they would retain the excellences of their English fathers; and this hope was not disappointed. The young animals as they grew up preserved their beauty of form, maintained their condition without extraordinary food, and did not suffer from weaning. The ewe-lambs were carefully preserved, a few ram-lambs selected, and the rest castrated. The good condition of these tegs at the end of the first autumn induced us to fatten them. These young things fattened just like

old sheep of French breeds, and at the end of winter yielded 56 to 65 lbs. of meat, with 11 to 13 lbs. of tallow.

The next year the same cross was tried with the same success.

The third year was still more interesting. Our first ewe-lambs, at the age of twenty months, had been put to the rams which had been saved. The offspring was most equal in quality, though proceeding from parents which were a first cross; indeed they were more level in appearance than the offspring of some native flocks.

From that time now for some years there has been at La Charmoise a double set of lambs; one set from the New-Kent rams and the mixed-blood ewes, another from rams and ewes the result of that cross.

A remarkable circumstance continues to this very year—I mean the perfect resemblance of the two sets of lambs obtained by the two different methods. I have often divided them into lots, and then found it impossible, even by careful examination, to distinguish one set of lambs from the other. This fact is most important—it proves that the breed is established. It only remains, in order to attain the utmost fixity and perfection, that we select carefully the rams and the breeding ewes. This is what will be henceforth done. At first we kept all the ewe-lambs, in order to reach the amount of 500 breeding ewes, the limit of our establishment. We have now the power of selection, in order to keep up that number; and we have great encouragement, in the prizes already won, still further to improve this breed by careful selection.

It is stated that the La Charmoise breed have taken prizes whenever they have been shown at Versailles or Poissy.

Note.—It was in the first number of this journal the late Lord Spencer stated, he had observed that the worse bred the female is, the more likely is the offspring to resemble a well-bred sire; and he told me that, practically, he should prefer a cow of no breed, to an indifferent pure-bred cow, for a good thorough-bred bull. The principle, however, has never been so thoroughly carried out as in the above experiments at La Charmoise, for the communication of which I am indebted to Mr. Rives, the late diplomatic representative at Paris of the United States. Besides their practical value, I cannot but think they throw some little light on one of the most mysterious of all physiological problems—the renewal of the features of parents in the reproduction of animals.—PH. PUSEY.—*Journal of the Royal Agricultural Society.*

MANAGEMENT OF DAIRY CATTLE. 1854 to 1856.

By T. HORSFALL.

*(Continued from p. 522.)**Gain or Loss of Condition ascertained by Weighing Cattle periodically.*

FOR some years back I have regularly weighed my feeding stock, a practice from which I am enabled to ascertain their doings with greater accuracy than I could previously. In January, 1854, I commenced weighing my milch cows; it has been shown by what I have premised, that no accurate estimate can be formed of the effect of the food on the production of milk, without ascertaining its effect on the condition of the cows. I have continued the practice once a month almost without omission up to this date. The weighings take place early in the morning, and before the cows are supplied with food; the weights are registered, and the length of time (15 months) during which I have observed this practice, enables me to speak with confidence of the results.

The cows in full milk yielding 12 to 16 quarts each per day vary but little—some losing, others gaining, slightly; the balance in the month's weighing of this class being rather to gain. It is common for a cow to continue a yield from six to eight months before she gives below 12 quarts per day, at which time she has usually, if not invariably, gained weight.

The cows giving less than 12 quarts, and down to 5 quarts per day, are found when free from ailment to gain without exception. This gain, with an average yield of nearly 8 quarts per day, is at the rate of 7 lbs. to 8 lbs. per week each.

My cows in calf I weigh only in the incipient stages, but they gain perceptibly in condition, and consequently in value: they are milked till within four to five weeks previous to calving. I give the weights of three of these, and also of one heifer, which calved in March, 1855:—

No.		1854		1855		Gain
			cwt. qr. lbs.		cwt. qr. lbs.	lbs.
1	Bought and weighed .	July.	10 1 20	April	11 3 0	148
2	" " " .	"	8 2 10	"	10 2 0	214
3	" " " .	"	8 2 0	"	10 0 0	184
4	{ Heifer, which calved also in March, 1855, weighed }	"	7 0 0	"	9 3 0	300

These observations extend over lengthened periods on the same animals, of from 30 to upwards of 50 weeks; a cow, free from calf and intended for fattening, continues to give milk from 10 months to a year after calving, and is then in a forward state of fatness, requiring but a few weeks to finish her for sale to the butchers.

It will thus appear that my endeavours to provide food adapted to the maintenance and improvement of my milch cows have been attended with success.

On examining the composition of the ordinary food which I have described, straw, roots, and hay, it appears to contain the nutritive properties which are found adequate to the *maintenance* of the animal, whereas the yield of milk has to be provided for by a supply of extra food; the rape-cake, bran, and bean-meal which I gave will supply the albumen for the casein; it is somewhat deficient in oil for the butter, whilst it will supply in excess the phosphate of lime for a full yield of milk. If I take the class of cows giving less than 12 quarts per day, and taking also into account a gain of flesh, 7 to 9 lbs. per week, though I reduce the quantity of extra food by giving less of the bean-meal, yet the supply will be more in proportion than with a full yield; the surplus of nitrogen and phosphoric acid, or phosphate of lime, will go to enrich the manure.

I cannot here omit to remark on the satisfaction I derive from the effects of this treatment on the fertility of the land in my occupation. My rich pastures are not tending to impoverishment, but to increased fertility; their improvement in condition is apparent. A cow in full milk, giving 16 quarts per day, of the quality analysed by Haidlen, requires, beyond the food necessary for her maintenance, 6 to 8 lbs. per day of substances containing 30 or 25 per cent. of protein. A cow giving on the average 8 quarts per day, with which she gains 7 to 9 lbs. per week, requires 4 to 5 lbs. per day of substances rich in protein, beyond the food which is necessary for her maintenance. Experience of fattening gives 2 lbs. per day, or 14 lbs. per week, as what can be attained on an average and for a length of time. If we consider $\frac{1}{2}$ lb. per day as fat, which is not more than probable, there will be $1\frac{1}{2}$ lb. for flesh, which, reckoned as dry material, will be about $\frac{1}{3}$ lb.; which is assimilated in increase of fibrine, and represents only $1\frac{1}{3}$ to 2 lbs. of substances rich in protein beyond what is required for her maintenance.

If we examine the effects on the fertility of the land, my milch cows, when on rich pasture, and averaging a yield of nine quarts per day, and reckoning one cow to each acre, will

carry off in 20 weeks 25 lbs. of nitrogen, equal to 30 of ammonia. The same quantity of milk will carry off 7 lbs. of phosphate of lime in 20 weeks from each acre.

A fattening animal gaining flesh at the rate I have described will carry off about one third of the nitrogen (equal to about 10 lbs. of ammonia) abstracted by the milch cow, whilst if full grown it will restore the whole of the phosphate.

It is worthy of remark, that experience states that rich pastures used for fattening fully maintain their fertility through a long series of years; whilst those used for dairy cows require periodical dressings to preserve their fertility.

If these computations be at all accurate, they tend to show that too little attention has been given to the supply of substances rich in nitrogenous compounds in the food for our milch cows, whilst we have laid too much stress on this property in food for fattening cattle. They tend also to the inference, that in the effects on the fertility of our pastures used for dairy purposes, we derive advantage not only from the phosphate of lime, but also from the gelatine of bones used as manure.

On comparing the results from my milch cows fed in summer on rich pasture, and treated at the same time with the extra food I have described, with the results when on winter food, and whilst wholly housed, taking into account both the yield of milk and the gain of weight, I find those from stall-feeding fully equal to those from depasture. The cows which I buy as strippers, for fattening, giving little milk, from neighbouring farmers who use ordinary food, such as turnips with straw or hay, when they come under my treatment, increase their yield of milk, until after a week or two they give two quarts per day more than when they came, and that too of a much richer quality.

Richness of Milk and Cream.

I sometimes observe in the weekly publications which come under my notice, accounts of cows giving large quantities of butter; these are usually, however, extraordinary instances, and not accompanied with other statistical information requisite to their being taken as a guide; and it seldom happens that any allusion is made to the effects of the food on the condition of the animals, without which no accurate estimate can be arrived at. On looking over several treatises to which I have access, I find the following statistics on dairy produce: Mr. Morton, in his 'Cyclopædia of Agriculture,' p. 621, gives the results of the practice of a Mr. Young, an extensive

dairy-keeper in Scotland. The yield of milk per cow is stated at 680 gallons per year; he obtains from 16 quarts of milk, 20 oz. of butter, or for the year, 227 lbs. per cow; from 1 gallon of cream 3 lbs. of butter, or 12 oz. per quart. Mr. Young is described as a high feeder; linseed is his chief auxiliary food for milch cows. Professor Johnston ('Elements of Agricultural Chemistry') gives the proportion of butter from milk at $1\frac{1}{2}$ oz. per quart, or from 16 quarts 24 oz.; being the produce of four cows of different breeds—Alderney, Devon, and Ayrshire—on pasture, and in the height of the summer season. On other four cows of the Ayrshire breed, he gives the proportion of butter from 16 quarts as 16 oz., being 1 oz. per quart. These cows were likewise on pasture. The same author states the yield of butter as one fourth of the weight of cream, or about 10 oz. per quart. Mr. Rawlinson ('Journal of the Royal Agricultural Society,' vol. xiii, p. 38) gives the produce of 20,110 quarts of milk churned by hand as 1109 lbs. of butter, being at the rate of fully 14 oz. per 16 quarts of milk; and from 23,156 quarts of milk, 1525 lbs. of butter, being from 16 quarts nearly $16\frac{3}{4}$ oz. of butter. The same author states that the yield of butter derived from five churnings of 15 quarts of cream each, is somewhat less than 8 oz. per quart of cream. Dr. Muspratt, in his work on the 'Chemistry of Arts and Manufactures,' which is in the course of publication, gives the yield of butter from a cow per year in Holstein and Lunenburg at 100 lbs., in England at 160 lbs. to 180 lbs. The average of butter from a cow in England is stated to be 8 oz. or 9 oz. per day, which, on a yield of 8 to 9 quarts, is 1 oz. per quart, or for 16 quarts 16 oz. The quantity of butter derived from cream is stated as one fourth, which is equal to about 9 oz. per quart. The richest cream of which I find any record, is that brought to the Royal Society's meeting during the month of July, for the churns which competed for the prize. On referring to the proceedings of several meetings, I find that 14 oz. per quart of cream is accounted a good yield.

I have frequently tested the yield of butter from a given quantity of my milk. My dairy produce is partly disposed of in new milk, partly in butter and old milk, so that it became a matter of business to ascertain by which mode it gave the best return. I may here remark that my dairy practice has been throughout on high feeding, though it has undergone several modifications. The mode of ascertaining the average yield of butter from milk has been, to measure the milk on the churning day after the cream has been

skimmed off, then to measure the cream, and having, by adding together the two measurements, ascertained the whole quantity of milk (including the cream), to compare it with that of the butter obtained. This I consider a more accurate method than measuring the new milk, as there is a considerable escape of gas, and consequent subsidence, whilst it is cooling. The results have varied from 24 to $27\frac{1}{4}$ oz. from 16 quarts of milk. I therefore assume in my calculation 16 quarts of milk as yielding a roll (25 ounces) of butter.

As I have at times a considerable number of cows bought as strippers, and fattened as they are milked, which remain sometimes in my stalls eight or nine months, and yield towards the close but five quarts per day, I am not enabled to state with accuracy, and from ascertained data, the average yield per year of my cows kept for dairy purposes solely. However, from what occurs at grass-time, when the yield is not increased, and also from the effects of my treatment on cows which I buy, giving a small quantity, I am fully persuaded that my treatment induces a good yield of milk.

As the yield of butter from a given quantity of cream is not of such particular consequence, I have not given equal attention to ascertain their relative proportions. I have a recollection of having tested this on a former occasion, when I found 14 to 16 oz. per quart, but cannot call to mind under what treatment this took place.—*Journal of the Royal Agricultural Society.*

(To be continued.)

ON THE PHYSIOLOGICAL MECHANISM OF THE FORMATION OF SUGAR IN THE LIVER.

By M. CLAUDE BERNARD.

THE physiological formation of sugar in animals should be considered, as I have already said, not as a phenomenon of direct chemical separation of the sanguineous elements at the moment of the passage of the blood through the liver, but as a function performed by the succession and combination of two essentially distinct acts.

The first action is purely vital, for it cannot take place without the influence of life, it consists in the creation of the glucogenic matter in the living hepatic tissue.

The second action is chemical, and may take place without

the vital influence, it consists in the transformation of the glucogenic matter into sugar with the aid of a ferment.

The reunion of these two orders of conditions is necessary for the appearance of sugar in the liver. The glucogenic matter must be created by the vital activity of the organ; it is then necessary that this matter should be brought in contact with the ferment which is to convert it into sugar.

The glucogenic matter is formed like all the products of organic creation, by means of the phenomena of slow circulation which accompany the acts of nutrition. As for deciding if, amid the numerous blood-vessels with which the liver is provided, there be any which are peculiarly charged with this nutritive circulation and others peculiarly connected with the phenomena of the chemical transformation of the glucogenic matter, that is a physiological question upon which it is at this moment unnecessary to enter. It will suffice for us to indicate in a general manner how the contact between the glucogenic matter and its ferment may take place in the living animal.

I at first thought that the ferment was peculiar to the liver, like the glucogenic matter itself; I had even succeeded in obtaining it in an isolated state. But, seeing afterwards that the sanguineous fluid possesses the property of transforming this glucogenic matter into sugar with the greatest readiness, it became impossible to think of a localization of the ferment; that extracted from the liver coming, very probably, from the blood itself. So that if out of the organism we have several ferments which operate the transformation of the glucogenic matter into sugar, in the living animal it is only necessary to admit one represented by the blood, which moreover possesses the property of rapidly changing hydrated vegetable starch into dextrine and sugar. Without entering into the intimate mechanism of this contact, and into the explanation of the physiological causes which vary its intensity, which would lead us into descriptions of microscopic anatomy and phenomena of capillary circulation which will be developed elsewhere; we shall confine ourselves to saying that the observation of physiological phenomena teach us that in the liver, parallel with this slow and nutritive circulation, there must be considered another, intermittent, variable, and whose superactivity coincides with the appearance of a larger quantity of sugar in the tissue of the organ.

In digesting animals the circulation in the *vena porta* is super-excited, and then the transformation of the glucogenic substance is much more active, although the formation of

this matter does not appear to correspond with it at that moment. This circulatory super-activity may likewise be awakened without digestion ; and then the same phenomena of transformation of the matter and appearance of the sugar take place. Among hibernating or benumbed animals, such as frogs for instance, the slackening of the circulation, which is connected with a lowering of the temperature, causes a diminution, and sometimes the almost entire disappearance of the sugar from the liver. But the glucogenic matter is there all the same, as may be proved by extracting it. It is then only necessary to put the benumbed frogs in the warmth to render their circulation active, and the sugar then soon appears in the liver. On placing the animals again in a low temperature we find that the sugar diminishes, or disappears to show itself again when the frogs are again placed in a warmer place. I must add that these singular alternations of the appearance and disappearance of the sugar may be reproduced several times without the animals having any food, and by acting solely on the phenomena of the circulation by the intermediation of the temperature.

In warm-blooded animals we can also act, by means of the nervous system, on the phenomena of the abdominal circulation, and afterwards secondarily on the transformation of the glucogenic matter in the liver. I have shown that if we cut or wound the spinal marrow in the region of the neck, below the origin of the phrenic nerves, we considerably diminish the activity of the hepatic circulation, so much so that after four or five hours there are no traces of sugar in the liver of the animal, the tissue of which still remains charged with glucogenic matter. It is remarkable that after this operation the temperature of the abdominal organs falls considerably, at the same time many other perturbations are produced of which I cannot now stop to speak.

I have likewise proved that by wounding the cerebro-spinal axis in the region of the fourth ventricle, we produce exactly contrary phenomena ; the abdominal circulation is very much accelerated, and consequently the renewal of the contact of the glucogenic matter with its ferment considerably extended. The transformation of the glucogenic matter moreover becomes so active, and the quantity of sugar removed by the blood becomes so considerable, that the animal, as is well known, becomes diabetic in this case, that is to say, that the excess of sugar poured into the blood by the super-excited liver passes into the urine.

In these two cases the nervous system acts evidently on the purely chemical manifestation of a physiological pheno-

menon. But when we analyse its mode of action we find that its effects are only mechanical, and are brought first to the motor organs of the capillary circulation, the effect of which has been to lessen or hinder, or else to extend and augment the contact of two substances capable by their properties, of reacting one on the other; they thus produce a chemical phenomenon which the nervous system regulates indirectly, but upon which it has no direct and primitive action. This view is not peculiar to the liver, and I shall prove further on that the chemical influences which are recognised in the nervous system in general are most commonly purely mechanical.

As for the conclusions which we can at this moment deduce, in a general physiological point of view, from the mechanism which we have indicated for the formation of sugar in the liver, it is impossible not to be struck with the similarity which exists in this respect between the glucogenic function of the liver and the production of the sugar in certain acts of the vegetable organism. In a seed, for instance, which produces sugar during germination, we have likewise to consider two series of very distinct phenomena; the first primitive, entirely vital, is constituted by the formation of starch under the influence of the life of the vegetable; the other consecutive, entirely chemical, which may take place without vegetable life, is the transformation of the starch into dextrine and sugar by the action of diastase. When a liver taken from a living animal continues for a certain time to produce sugar, it is evident that the vital phenomenon of the creation or secretion of the glucogenic matter has ceased; but the chemical phenomenon continues to be produced if the conditions of humidity and heat necessary for its accomplishment are realised. In the same way, in the seed separated from the plant, the vital phenomenon of the secretion of starch has ceased with the vegetable life; but, under the influence of favorable physico-chemical conditions, its transformation into dextrine and sugar by means of diastase may be produced. Finally, it is easily seen from these parallel observations, that the formation of sugar in the liver of animals passes through three series of successive transformations in every respect analogous to that of the formation of starch, dextrine, and sugar in the seed of vegetables.

According to all the facts contained in this work, we may conclude that the question of the formation of sugar in animals has made an important step in advance, in consequence of the isolation of the glucogenic matter which

always exists previously to the sugar in the tissue of the liver.

We still have to determine the organic form of this glucogenic matter, as well as the exact anatomical and physiological conditions of its formation in relation to the phenomena of development and the various physiological states of the liver. Some experiments which I have already commenced on this subject lead me to hope that it may be possible to go still further into the glucogenic question, and to localise the formation of the glucogenic matter in the peculiar elements of the hepatic organ.—*Comptes Rendus*.

THE VAGARIES OF PHYSIC.

LORD BACON assigned as a reason why the science of medicine had not advanced and kept pace with the other sciences, that “physicians had reasoned in a circle and not in a line.” Dr. Benjamin Rush compared the same science, as practised in his day, to “an unroofed temple, cracked at the sides, and rotten at the foundation.” An American writer, who runs a tilt against every nostrum not belonging to the vegetable kingdom, hearing that Mr. Wakley had recommended all poisons sold in druggists’ shops to be placed on high shelves, dryly observed, that “in that case the lower part of the establishment would generally be *to let*!” Seeing, then, in what bad odour the disciples of Esculapius are held even by members of their own fraternity, and how each generation, in its turn, “kicks against the rusty curb of old father antic, the law,” we feel almost disposed to place our medical man under the conservative guardianship of that African doctor whose mode of practice is shrewdly likened by Sir John Forbes to that of the homœopathic school of medicine: the sable physician’s remedy was to write his prescription on a board, and then, having carefully washed it off, to *give his patient the water to drink*! Verily, from the days of Hippocrates downwards, so many have been the odd conceits that have sprung, full-armed for mischief, from the prolific brains of the world’s physicians, so many and so wonder-working the medicaments propounded, from the “all-heal of Hercules” to “Parr’s Life Pills,” that, leaving the graver side of the subject to take care of itself, and dealing only with its “tickled surface,” it seems as if an amusing volume might be written on the Vagaries of Physic. Omitting from our category those who have “turned diseases to commodity,”

and in whom "there is no more faith than stewed prunes," it would be worth while to trace the path of some one of those—and their name is legion—who, wise in their generation, have yet been led away by their own chosen and familiar will-o'-the-wisp. How have plain earnest men sometimes plunged headlong into quagmires through following the *ignis fatuus* of some particular traditionary mysticism, till, by the force of that very earnestness, they have succeeded in "driving the grossness of the foppery into a received belief, in spite of the teeth of all rhyme and reason!" How for centuries have our fathers before us given to some old formula a full measure of simple credence heaped up and brimming over; till we, in our later generation, are tempted to cry out indignantly: "Have we laid our brains in the sun and dried them, that they want matter to prevent such gross o'er-reaching as this?" Where now is our faith in the "simples" gathered beneath the moon, or plucked at some witching-hour under the "fiery trigons?" How far have we wandered from the pastures of old father "thyme," lost our relish for "sauce-alone, or Jack-by-the-hedge-side," and discarded the safe companionship of "Gill-go-over-the-ground!" How have we, degenerate, waged war in a crusade against "Saracen's Confound," and withheld from our gaping wounds the gentle succour of Teutonic "stab-wort!" How have we set up new idols for our worship, and, like true iconoclasts, broken down the mysterious image from the inner sanctuary, the holy of holies, of physic! In medical traditionary lore, this same icon, as all searchers into bygone authorities well know, was the image or likeness of a particular disease, said to be impressed on root, leaf, or flower, suggesting its specific virtue as a curative agent applied to the disease so indicated. It was called the *signature* of the plant. That prince of herbalists, Nicholas Culpeper, says: "I wonder in my heart how the virtues of herbs came first to be known, if not by their *signatures*." Now, as thou art a true man, O Nicholas, confide to us wherein it is fitting to put a bound to our credulity. In sober seriousness, if the "signature" be all-powerful, may there not be also—in spite of the poet—something in a *name*? May we not hope to "put money in our purse" by imbibing an infusion of "money-wort or herb-twopence;" or tame a quarrelsome wife by means of "loose-strife or grass-polly?" Might not "ashen-keys" be applied with effect to a locked-jaw; or a habit of early rising induced—under Morpheus—by an admixture of "pot-herbs, *boiled with an old cock!*"

Have you a mote in your eye, O my brother! search dili-

gently for the "pearl-trefoil;" it shall more benefit you than the four-leaved shamrock of fairy celebrity; "it hath a white spot in the leaf like a pearl. It is"—as you might have divined—"under the moon, and its icon shows that it is of a singular virtue against the pearl or pin and web in the eye." Or, better still, take "herb-clary;" this, too, is "under the moon," and goes right to the mark. "The seed put into the eyes, clears them from motes. Wild clary is a gallant remedy, to take one of the seeds and put it in the eye, and there let it remain till it drop out of itself (*the pain will be nothing to speak on*)." Thank you, Culpeper—Nicholas, we are obliged to you, but would fain be excused. The human animal is not, it would appear, the only "unfledged biped" beholden to the ancients: the callow fowls of the air have a wonder-working elixir for destroyed vision in "celandine or chelidonium, so called from a Greek word signifying swallow." But mark our oracle's reservation: "They say, that if you put out the eyes of young swallows when they are in the nest, the old one will recover their eyes with this herb. This I am confident, for I have tried it [the old sinner!], that if we mar the very apple of their eye with a needle, she will recover them again, *but whether with this herb or not, I know not*." The eyes, it seems, are "under the luminaries; the right eye of a man, and the left eye of a woman, the sun claims dominion over." Let those who attempt to operate for strabismus, look to it, or they may get themselves into trouble. In all matters ophthalmic, the Fates themselves seem to have laboured under an obliquity of vision. Esculapius, because of the marvellous cures he performed with the blood drawn from the right veins of Medusa's head—a lady who boasted but a reversionary interest in one eye, which belonged in common to herself and her lovely sisters the Gorgons—fell under the thunders of Jove; the issue being, that the great "luminary" Apollo himself, the father of physic, for his just vengeance, inflicted on the one-eyed Cyclopes who forged the thunderbolts, was thrust incontinently from heaven, and doomed to consort with the flocks of Admetus. After this, where shall the mortal be found bold enough to undertake so delicate an operation as that for *squinting*, on either the *right eye of a man, or the left eye of a woman* "under the luminaries?" Running through the pages of our author, there is a genuine undercurrent of humour and shrewd common sense. We feel sure that he believes not in one half he propounds with such solemn gravity. Sundry of his prescriptions savour strongly of the mendicant friar's celebrated recipe for the making of flint-

soup. In his concoction of simples, he slyly insinuates his "powdered beet" or his "cock-chicken." Certain herbs are shown to be peculiarly efficacious "gathered with the dew on them;" others are of remarkable potency "if the body be exercised after the taking thereof." In his love of sack and canary, he is the very Falstaff of physicians. He holds forth on the virtue of moderation, but has evidently no mind to treat his friends in private with anything so meagre as "a last year's pippin with a dish of caraways."—*Chambers's Journal*.

PARLIAMENTARY INTELLIGENCE.

EXTRACTS FROM MINUTES OF EVIDENCE OF THE "SELECT COMMITTEE ON THE SHEEP, &c., CONTAGIOUS DISEASES PREVENTION BILL."

(*Examination of Mr. J. B. Simonds continued from p. 536.*)

69. How do you propose to define the power of the inspector; would you give him power to turn such a beast as that out of the market which he thought was suffering under the incipient stages of disease only?—Certainly.

70. Would you give the inspector power to turn every beast out of the market which he thought it was possible might hereafter become afflicted with pleuro-pneumonia?—I would give him power to exclude any animal from the market which in his opinion at the time gave sufficient evidence of the disease, pleuro-pneumonia.

71. How can the exposure to sale of animals of this description in a fat-meat market, where nine tenths of the animals will be slaughtered within 48 hours after the market has concluded; how can the exposure of such animals as those for sale tend to the spread of disease?—The introduction of such an animal as that into the fat-meat market would not, under the circumstances you have named, tend to the spread of disease; but it is well-known that even in the so-called fat-cattle market of Smithfield many animals are bought for store purposes; bought by farmers, and taken into the country. If you could secure the killing of all the animals within a given length of time, that is in two or three days, then there would be no mischief resulting.

72. *Mr. Miles.*—And the meat would be perfectly good?—Yes.

73. In how many stages of the disease do you fancy that the meat would be fit for human food?—I think it would be fit for human food in the second stage of pleuro-pneumonia.

74. *Lord Naas.*—Did you ever know a beast suspected to be distempered bought in a fat-cattle market for the purpose of storing?—I have known many individuals that have purchased animals; for example, Irish animals, which they have supposed at the time to be labouring under the mere effect of fatigue, from being sent from market to market. They have thus not hesitated to buy them, but the sequel has proved that they were affected with pleuro-pneumonia at the time they were purchased,

75. They were bought for the purpose of storing?—Yes.

76. Do you think that an inspector, who would only have the same power of discovering whether these animals were afflicted with pleuro-pneumonia, would be a better judge than the gentleman you have spoken of?—As a professional man he would.

77. Do you think any man would buy a distempered beast, knowing it to be so, for the purpose of keeping it?—No; certainly not.

78. Do you think that pleuro-pneumonia can be cured?—As a general rule it cannot.

79. Do you not think it would tend much to spread disease, if beasts which were decidedly afflicted by pleuro-pneumonia were kept at home by their owners, and endeavoured to be cured, instead of being sent to market at once to be slaughtered?—I think not.

80. *Mr. Miles.*—Does not the English farmer, when he knows a beast is attacked with this disease, send him to the butcher?—That is the usual practice.

81. *Lord Naas.*—Do you not think that any Act of Parliament that would throw any obstacles in the way of a farmer getting rid of a distempered beast, would have the effect of keeping a considerable number of animals alive which would otherwise be slaughtered?—I think, if an Act is carefully prepared, it would have no such effect.

82. How could you prepare an Act that would not have that effect? Do you not think that this Act would have that effect as it is now?—I think not; I think this Act does not go far enough.

83. Do you not think that the provisions of this Act would prevent diseased animals from being slaughtered as quickly as they are now; would it not prevent them from

coming to the market?—I do not think it would prevent them coming to the market.

84. What is the use of their going to the market if they cannot be sold?—Exactly so.

85. *Mr. Miles*.—But it subjects them to the penalty of £20?—Yes, for sending any animal which is known to be in a state of disease from off the farm to the market.

86. *Chairman*.—But if I understand you right, your opinion is that they ought not to come to market at all?—Just so.

87. That is your object in legislating on the subject?—My object in legislating is to keep these animals as much as possible from being brought in contact with other animals.

88. *Mr. Caird*.—In what condition would a farmer be who has cattle that he is informed that he can neither sell nor dispose of?—They are saleable as slaughtered animals in the early stages of the disease.

89. *Lord Naas*.—Would it not have the effect of casting suspicion on the whole dead-meat market in this country, and would not the conclusion that people would come to be, that the greater portion was diseased meat?—I can hardly think it would have that effect. It is well known that the meat of diseased animals finds its way into the dead-meat market, and has done so for years and years past in very considerable quantities; not only animals which are labouring under disease, but frequently animals that die with disease are thus disposed of. There is a class of butchers that will be found to buy anything in the shape of an ox, or a pig, or a sheep.

90. *Mr. Miles*.—Have you been to Newgate Market on a Saturday?—Yes, frequently.

91. Have you seen the description of meat that is sold there to the poorer classes?—I have seen meat exposed for sale which was quite unfit for human food.

92. In every state of disease?—Yes.

93. A proper inspection, according to your idea, would prevent that?—Yes.

94. At present, I believe, the inspection is wretchedly bad?—Yes.

95. *Mr. Ball*.—Do you think it would be injurious to a farmer if he was to report immediately that he discovered disease in his cattle?—I can hardly think it would.

96. Would it not be for his benefit to have the diseased animal taken from the rest, and if, upon his communicating to the Board of Guardians, or any other recognised body, they certify that the other animals were pure and clean, that would rather advance than injure his sale, as Lord Naas

supposes?—Under such circumstances it is possible that that might be the operation of the measure; but my desire would rather be to have a report made to some competent authority, as, for example, through the Board of Guardians to the Board of Trade, or a sectional division of the Board of Health. I think that there are so many well-known difficulties in the way of the treatment of cattle when labouring under disease, that often measures of a prophylactic nature might be suggested by the Board of Health to an individual farmer which he would not object to put in operation, and that with considerable advantage.

97. Therefore, you cannot suppose that it is to the farmer's interest to conceal disease?—I have never found that a farmer has to me individually, or any other professional man, concealed the amount of disease.

98. Is it not to the farmer's advantage to be able, if he has 100 beasts, to take those 100 beasts into the market, and if anybody suspected disease, to say, "These have been certified by an inspector to be sound;" would not that facilitate his sale?—Unquestionably it would.

99. *Mr. Gurdon.*—And if at the same time it was known that out of those 100 beasts ten had dropped down from pleuro-pneumonia, would it not make people very shy of buying the other ninety, if it was once known that he had had the disease within a short time on his farm?—It is doubtless one of those things that it is exceedingly difficult to deal with in its various details. There is much to be said on both sides of the question.

100. *Mr. Ball.*—Suppose he had ten drop down dead, and he had driven the other fifty or sixty to market, would it not benefit him to have those reported as pure, and the responsibility thrown on the inspector instead of himself?—There can be no question that if animals are sent to a market, and they are known to have come from a diseased herd, their value would be deteriorated; but I think that that is rather an extreme view to take of a question of legislation to prevent the extension of contagious diseases, and I further think that you must deal with facts, and not with probabilities arising out of the existence of a disease on a farmer's premises. If it is a fact that a farmer has a disease which is established beyond all question of doubt to be a contagious one, and more especially if it should be a disease which is known to be incubated in the system of an animal for a given time before it declares itself, then under such circumstances it is the bounden duty of the Government, for the protection of the interests of the country, to prevent those animals being

disseminated throughout the length and breadth of the land.

101. *Mr. Caird.*—How long do these symptoms exist without being detected?—They may exist for three or four days without being detected.

102. Or longer?—In individual cases perhaps longer.

103. Then, as the disease cannot be detected in the early stages, is it not impossible for any inspection, however stringent, to prevent such stock being sold as sound, and might not the disease be spread over the country in spite of legislative restriction?—It might be so unquestionably, but those would only be, comparatively speaking, a few cases.

104. Still those few cases would spread the disease?—Yes.

105. And thus you see it is impossible to prevent the spread of the disease by legislative restriction?—I think it is impossible to prevent entirely the spread of disease by legislative restriction, but it may be prevented to a very great extent.

106. *Mr. Ball.*—There are diseases in the human body that you cannot entirely eradicate, and yet it is good to have a professional man to attend and examine, and to endeavour to cure; so, in like manner, the inspection here would be a prevention?—Yes; the inspection would test the nature of the affection under which the animal is labouring, and the inspector would be able to determine whether it was a case of an ordinary disease, or a contagious one. I may remark to the Committee, that in many parts of the Continent, in Hanover for example, veterinary surgeons practising in the country are bound to report to the Government every case of contagious disease they meet within the course of their practice. In Holstein, in Mecklenburgh, in Lübeck with its territory, and in Hamburgh with its territory, the measures as regards pleuro-pneumonia are far more stringent than any thing I have alluded to. They go as far as the slaughtering of all the animals that have the disease, and others that have been living with them.

(To be continued.)

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

The Science and Art of Surgery ; being a Treatise on Surgical Injuries, Diseases, and Operations. By JOHN ERICHSEN, Professor of Surgery and of Clinical Surgery in University College, and University College Hospital. Second edition. Enlarged and carefully revised. Illustrated by Four Hundred Engravings on Wood. London: Walton and Maberly, 1857.

It requires just now an effort for the professional writer to persuade himself that the importance of his calling is no less real than has been hitherto generally supposed. The din of war is so loud, the howl for national vengeance so terrible, that the man whose every thought is peace and retirement for the cultivation of the understanding all but begins to fear that he may be swallowed up, body and soul, in the universal whirl, and that to the next generation *l'homme de lettres* will be as curious a mental hallucination, as the sea serpent has certainly been in the imaginative creations of contemporaries.

In bygone years September was a singularly pacific month for the *schoolmen* ; cheerful rusticators, fresh from Killarney and Loch Lomond, greeted their no less enlivened friends returning from the Oberland and the Lake of Garda, and all looked on the 1st of October as the new year's day of scientific pedagogues, as the commencement of another period in the silent life of the most peaceable of men. But this year all is sorrow and agitation. The spirit of destruction has unsheathed its sword, the rage is for arms, the thirst for vengeance, and the resolve for death. But storms, however terrible, can never be but storms—periodical convulsions in which the general order of things is disturbed for no other

purpose than to illustrate, in the end, the immutability of the laws which from all time have ruled the universe, and are destined to work out the *one* purpose subservient to which are all events, however inexplicable to the limited human understanding.

If the national calamities which have befallen us of late, can be said as yet to have tended to inculcate any Moral in particular, it is that the old aphorism, *knowledge is power*, has been too little revered—not sufficiently held as the great rule of practice, from which individuals, societies, and nations cannot deviate without incurring the greatest of risks. Gold, arms, strategy, diplomacy are *not* power; they are but instruments, and like all other instruments quite as suited to destroy as to form, to annihilate as to save, unless those who employ them do so with the full light of knowledge.

Anybody who will take the trouble to examine attentively the present state of things, will perceive that however much parties differ in other points, they agree on this grand one—knowledge is the want of the day—of the hour; and that in every walk of life. Each man to his own business,—one duty for each, and that well discharged. Plain truths: now is the time for practice.

So far from there being any danger that the arts of war will long divert the popular attention, it is certain that, so soon as the storm lulls, crews and single hands will be called to account, and then will those who, in their respective departments, have most sedulously nursed and multiplied the fruits of the human understanding, have fresh cause for being steadfast to the belief that the original conception of the Creator must be fulfilled.

Never was an academic year entered upon with greater responsibility than the present—never with greater hope. The seed of learning cannot be sown too generally or too rapidly to fulfil the public want. Hence we hail with peculiar satisfaction every sign of progress, and such a sign undoubtedly is the second edition of Mr. Erichsen's 'Science and Art of Surgery,' fresh from the press. In four short sessions has the

large first edition been exhausted, and its successor presents us with an addition of 100 closely printed pages, and no less than 150 woodcuts, besides the original 250. The publisher and his satellites, the compositor and engraver, cannot be denied the merit of having done their work. What about the author?

Thus begins the Preface: "In preparing a second edition of this work for the press, every page has been carefully revised. Some chapters have been almost completely rewritten. The text has been considerably enlarged. . . . The additions are almost exclusively of a practical character; my wish being to make the work a guide to the practitioner, as well as a text-book to the student. Having this double object in view, I have entered with much minuteness into many practical details, which I trust will be found as useful to the student as they are important to the practitioner. My increasing experience as a teacher leading me to fear that there is no little risk of the cultivation of the *art* not keeping pace with the progress of the *science* of surgery."

Has not Mr. Erichsen been too complacent with the advocates of the *practical*? We have no faith in hands without brains, and as a rule which challenges exception, it may safely be laid down that the eulogists of simple handicraft, in medicine, are actuated in their satire on scientific men, by something like the same feeling with which it may reasonably be supposed the eunuchs of the East regard the perfect lords of the creation. It is not that *science* is in excess; we think it falls short of the requirement; certainly much of it that passes current is, if not base metal, at least what electroplate is to real silver. When, however, Mr. Erichsen expresses a fear lest art do not keep pace with science in surgery, we fully agree with him, and we extend our belief to the whole domain of medicine. A medical man cannot have too much of *science*, but he must not know too little of *art*. Now this is apt to be lost sight of, and the cause of progress suffers by men, teachers as well as pupils, seeming to believe that the aids of modern discovery can dispense with the essential of old common-place. The stethoscope, the micro-

scope, the ophthalmoscope, are invaluable aids ; but because a man has them for *extraordinary* work, he must not consider himself dispensed from using his eyes, ears, and fingers with the same diligence which raised our forefathers to eminence. Because a pupil can now follow out the beautiful researches of Bernard and Chauveau in experimental physiology, is surely no reason why he shall not strap ulcers and saw dead bones or broomsticks, to learn the handling of the saw and such like handicraft. But with time all excesses are duly moderated, and in its oscillations the pendulum ever indicates progress. The day will come—perhaps is not far distant—when by practice in medicine and surgery shall be understood the utilitarian application of a sound philosophy, when the two families of so-called *practical* men and *theorists* shall be designated by their real names—*empirics and speculators*. The tide has set in.

Conformably to his well-earned reputation as a hospital surgeon, Mr. Erichsen gives evidence in every part of his work of clear perception, decided judgment, and vast experience ; and although we might have desired more than twenty-one lines on the treatment of pyæmia, a fuller examination of the question of the day, *caustics in cancer*, it is unquestionable that the work before us is in the very first rank of the surgical treatises now current ; not one exists which we could more conscientiously indorse as a guide to the uninitiated, or as a staff to the practised traveller in search of surgical knowledge.

The Social and Political Relations of Drunkenness. Two Lectures, by THOMAS LAYCOCK, M.D., F.R.S.E., &c., Professor of the Practice of Medicine, and of Clinical Medicine in the University of Edinburgh. Second Edition.

WE would that every one should read these Lectures, and especially students of medicine, to whom they are dedicated.

There is a healthiness of tone in them which commend them much to our admiration.

Dr. Laycock is not a *total abstinence* man. He takes a sound, moral, scientific, and common-sense view of the question. We might ascend higher still, and say a religious one; thus adducing the highest motive for moderation in all things. He therefore strongly denounces all indulgence leading to intemperance, or even an approach thereto. With this we concur, for neither the Divine Founder of Christianity nor his Apostles condemned a proper or timely use of stimulants, but contrariwise, since there are periods and circumstances when they are not only required, but imperatively demanded; and we have no desire to be wise above that which is written.

The present age would seem to be one of extremes, which are always dangerous. If we were to pen down all that has been said about what we may not eat and drink, we should be left with only a modicum of food for our daily sustenance. But all God's creatures are good, partaken of with thankfulness. In wisdom He has made them all, and they are for our use. To abuse them, and thus to run into excess of riot, betokens an ungrateful heart, and degrades man lower than the brute.

Drunkenness and gluttony are unquestionably great evils, viewed either morally or politically. Perhaps, the former is the more prevalent vice, since the means of accomplishing it are more easily and cheaply obtained.

"A drunkard," says Dr. Laycock, "is a man who habitually impairs and abolishes his mental and bodily powers by the use of poisonous drinks, the effective constituent of which is a chemical compound known as Alcohol. Intoxication in its medical sense, means the morbid state induced by any poisonous agent; so that strictly, a man who impairs his faculties by other drugs, as Ether, Opium, Tobacco, or Indian Hemp, intoxicates himself, and in fact the drugs I mention are used by mankind for the same purpose as alcoholic drinks.

"Alcohol, in common with all poisonous agents, produces, when taken into the blood, results which vary in extent according to various circumstances, but under any circumstances, if taken in sufficient quantity, it abolishes the functions of the brain. All consciousness and will is then suspended, and the man is said to be dead drunk. If the poison operates still more deeply and abolishes the functions of that part of the nervous system

which maintains the activity of the heart and lungs, then the man dies; he perishes in his drunkenness."

* * * * *

"In the great majority of drunkards, the continuous use of alcohol produces less manifest changes in the mental state by acting upon the mental organ. The healthy balance is impaired as in an ordinary fit of drunkenness; but it is disturbed slowly, almost imperceptibly. At last, however, a change is manifested in the whole man. He has become more of an animal, that is, more sensual. On the one hand, the energy of his intellectual and rational nature is diminished; on the other, the vigour of the appetites and passions is increased. He has, therefore, less self-control; less desire for what is rational and intellectual; more desire for what is sensual and brutal. He undergoes a moral degradation, and that through a physical or material change in the organ of mind—the brain. In extreme cases of this kind—and they are more frequent than those of delirium tremens—it will be found that the high-minded, honorable man has become a cunning, selfish liar or cheat; the religious man a sensual hypocrite; the faithful, chaste wife, an adulteress; the indulgent husband and father a terror to wife and child.

"But the changes induced in the brain of the drunkard may lead to more than this,—they may induce actual insanity. The degradation is, however, in the same direction, but it reaches the lowest depths of his nature. Imbecility, homicidal violence, and suicidal melancholy are the three most common forms.

"Now, if there be a predisposition to any disease of the brain or nervous system, alcohol will excite that predisposition into activity. But smaller doses will be as effectual in persons thus predisposed as large doses in persons otherwise constituted. Insanity is thus often induced where there is a family predisposition, or paralysis and various other affections of this kind."

* * * * *

"How shall we ascertain the extent of the evils inflicted on society by habits of drunkenness? Gold is a standard of value, and if we could estimate to what extent skilled labour is depreciated by the mental incapacity and disease which drunkenness entails, we might have at least one fixed point to refer to. Yet it is not possible to do this, for we should have to ascertain how many lives have been prematurely ended, how many deaths have been caused, how much property destroyed on sea or land by wrecks and fires,—by explosions in ships, mines, factories,—by upsets and accidents of various kinds—all due to incapacity induced by drunkenness: we should have to trace to the same causes what military enterprises have miscarried,—what offices of trust and honour have been lost,—how many merchants, manufacturers, and tradesmen have been ruined,—how often important secrets have been revealed—moral influence destroyed,—the father's hopes of his children for ever blighted. All these evils are incalculable."

"The principal cause of drunkenness lies in that love of pleasure or desire for happiness, which is an essential part of the nature of man." Here, again, high grounds are taken by the writer, with which we concur. He then contrasts good and happiness with evil and suffering, and points out the reasons, agreeing with Pope that—

“Man’s highest pleasures, all the joys of sense,
Lie in three words, Health, Peace, and Competence.
But Health consists with Temperance alone,
And Peace, oh, Virtue! Peace is all thine own.”

Advancing a step onward, he says—

“The higher classes of animals have, like man, a special apparatus for harmoniously combining all the machinery of the body; a central telegraph office—the seat of the will and of consciousness. This is the brain and the nervous system. It is in the brain that those changes take place which are coincident with desire and aversion, and of all other changes in the consciousness. If the brain is sufficiently injured, the man becomes unconscious; but for all that the soul may not cease to act; it certainly does not cease to exist. But we know nothing of it except as it is manifested through the body, so that we have to investigate the conditions of the brain if we would know the state of the soul. Now under ordinary circumstances, we know nothing of the working of each particular organ, nor even of their existence. It is only physiological science that teaches us the existence and structure and functions of these organs; without this, man knows nothing of his heart or lungs, or stomach or brain, nor need he, so long as all goes on harmoniously. So soon, however, as disease or disorder takes place, the play of the organs is revealed, he must eat the bitter fruit of the tree of knowledge, and he now not only knows that he has organs, but he also finds out that he must seek and obtain a knowledge of the method by which the divine artificer has constructed them, and the duties he has allotted to each, if he would get relief from pain. This is medical knowledge. Medicine is, therefore, one of the blessings which God has given to fallen man to alleviate the consequences of the primal curse.”

The desire for alcoholic fluids has, we are told, a two-fold origin: the exciting of a pleasant sense of health and vigour, and the removing of bodily languor and exhaustion, arising either from mental or physical causes. For the former they are uncalled for; while for the latter, when used with judgment, they are both necessary and beneficial. Youth and manhood are the ages most tempted to indulge in convivial excesses.

“It is from this period of life that drunken habits date so often their beginning. Young men fall victims to intemperance in a far greater proportion (that of five to one) than young women; and the same holds good as to other vices. The tendency to intemperance and crime diminishes as life advances, after the age of fifty. According to Mr. Neison’s researches, a youthful drunkard of 20 has the chance of living $15\frac{1}{2}$ years longer; a healthy temperate youth of the same age the probability of living 44 years longer.”

But we have said Dr. Laycock is not a total abstainer. As a medical man and philosopher, he knew that there are

states of the system demanding the employment of stimulants. Hence he says—

“Wine properly administered to those suffering from intense mental anxiety, is a most valuable remedy. It counteracts the tendency to suicidal insanity, generated by very depressing mental emotions in brains overworked or naturally feeble. I say properly administered, for taken in excess for this purpose, wine would be more dangerous than under ordinary circumstances. Nor is it mere depression of spirits that indicates this special medicinal use,—the condition of the heart and the digestive organs must be taken into account. It is in this direction that sound knowledge is required by the public at large, so that they may rightly use what rightly used is a great blessing. Undoubtedly the use I recommend is a medicinal one, but can it be expected that men and women would think it necessary to go and consult a medical practitioner whenever they have the heart-ache or are overwhelmed with sorrow? I don’t know a more important point for the total abstiners to investigate in reference to their pledge than this. There are circumstances in which their pledge might be most properly broken, because wine is indicated to ward off so serious an evil as permanent depression of spirits, or even suicidal insanity, or infanticide, when the brain is suffering the shock of some overwhelming grief or anxiety. But actual disease of the stomach, heart, and brain, causes often an overwhelming sense of sinking and distress. When the brain is affected, it causes a true *mania* for wine and stimulants; when it is the stomach, it is usually a symptom of an inflammatory or otherwise morbid condition of the stomach, very common in drunkards, and also common in cases of indigestion in delicate women. Being temporarily relieved by alcoholic stimulants, it lays the foundation for an ever-growing habit of taking them in women, and excites a more and more urgent desire in the drunkard. It is in this way that many persons of position and education have become irrecoverable sots.”

With this the first lecture is closed. The second is devoted to what has been done in the way of remedy, and what ought to be done to secure an effective reform of national drunkenness.

The perusal of this we also strongly recommend to our readers.

THE VETERINARIAN, OCTOBER 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

“THE CATTLE MURRAIN” OF IRELAND; AND THE GOVERNMENT PROCEEDINGS WITH REFERENCE TO “THE RINDERPEST.”

DURING the past month, many of the Irish papers have contained reports of the spread of “the cattle murrain” in that country, and a good deal of solicitude has been evinced by the public in consequence of these statements. The disease, we have every reason to believe, is none other than pleuropneumonia; and it is much to be regretted that such an ambiguous name as “murrain” should have been employed by the reporters, as it tends to keep up alarm, and to lead to false inferences respecting the true nature of the malady. The *Limerick Chronicle* says—“We are concerned to state that *the dreadful cattle murrain* has made its appearance with fatal effect in this district. A gentleman of this city, who holds a farm a few miles from town, lost by the disease, within the last month, 28 head of fine cattle, value £600. Private accounts also state that several agriculturists of the counties of Limerick, Clare, and Tipperary, have sustained losses by the malady, which is likewise progressing in a virulent form in Louth, Meath, and the districts adjoining Dublin. There is nothing, however, to lead to the belief that the disease has become epidemic.”

The *Roscommon Journal* also states “that the disease is very prevalent amongst the stock in that county, and that some of the farmers are suffering very great losses.” It adds, “Persons should be cautious in purchasing cheap beef.”

Besides these counties, the malady is said to have been very destructive in “King’s County;” the *King’s County Chronicle*, however, has a contradiction of this statement, and

in commenting upon it, the editor observes—"We have been up to this moment assured by some of the largest stock-masters, that their herds were never for years past more free from infectious or epidemic disease of any kind whatsoever. We request our contemporaries to insert this authentic contradiction of the statement, since its circulation and belief might have a most injurious effect upon the property and transactions of the stock-owners, especially at the approaching great fair at Banagher, which commences on the 15th of this month (September), and which is only second to Ballinasloe, both in the number and quality of the cattle exhibited and the large attendance of buyers who resort to it, and not only from all parts of this country, but from England and Scotland."

The alarmists have doubtless sounded the trumpet too loudly, but it is nevertheless true, that pleuro-pneumonia does prevail in many parts of the sister country, and to a somewhat greater extent than usual.

For several years past, many of the feeders of cattle have been chary in their purchases of animals imported from Ireland, more especially if they have been just sent in, as experience has proved that they are very susceptible to pleuro-pneumonia. Many an outbreak of this disease, and its extension to other animals already on the farm, has depended on these new comers.

This increased susceptibility has its origin in the privations and fatigue to which such cattle are exposed. Collected from various districts, they are driven to contiguous railway stations to be forwarded as quickly as possible to the coast for embarkation. Next they have to endure the miseries of a sea voyage of several hours' duration. Landed, it may be at Liverpool, they are "trucked" again for the Midland counties of England, and not a few of them are sent onwards to the cattle-markets in Norfolk, which they reach almost without having had a day's rest from the time they left their native meads and pastures. No wonder that disease should attend such a practice; or that the cattle, having been exposed either at home or on their arrival here to the

special causes of a destructive epizootic, should fall a sacrifice to its effects.

If that which we have here stated be the case when pleuropneumonia is not very rife, how much the more likely are these cattle to be affected when the opposite state of things obtains. We would, therefore, counsel agriculturists to be cautious in buying Irish cattle ; to select those only which give every appearance of health, and on their arrival at home to place them in quarantine, as it were, for about three weeks.

We turn now to the proceedings of our government with respect to the Rinderpest. It will be remembered that, in consequence of the alarming reports which reached England at the commencement of the present year, detailing the rapid spread and great fatality of this disease, the government, by an Order in Council, put restrictions on the importation of foreign cattle. A second Order has recently been published, repealing the one made in April last, when, in official language, "to avert the introduction of infectious diseases, the importation into the United Kingdom of cattle and horns, hoofs, and raw or wet hides or skins of cattle, which should come from, or should have been at any place within certain territories, therein mentioned, of the Emperor of Russia, or of the King of Prussia, or of the Grand Duke of Mecklenburgh Schwerin, or the territories of the free city of Lubeck, was prohibited."

The new Order states that it has been made to appear to her Majesty that there is no longer danger of the said disorders being introduced into this country by means of live cattle from the aforesaid countries or places, but that there is still danger of such disorders being introduced by means of horns, hoofs, bones, and raw or wet hides or skins of cattle imported thence.

Therefore, it is now ordered that "from and after the date hereof (August 28th), no horns, hoofs, bones, or raw or wet hides or skins of cattle, shall be imported or introduced into the United Kingdom, which shall have come from, or shall have been at, any place within those territories of the Emperor of Russia, or of the King of Prussia, or of the Grand Duke of Mecklenburgh Schwerin, which respectively are in,

or border upon, the Gulf of Finland, or any part of the Baltic Sea between the Gulf of Finland and the territories of the free city of Lubeck, or which shall come from, or shall have been at, any place within the territories of the free city of Lubeck; and also, that from and after the date hereof, no cattle, and no horns, hoofs, bones, or raw or wet hides or skins of cattle, shall be imported into the United Kingdom which shall be, or shall have been, on board any vessel at the time with any horns, hoofs, bones, or raw or wet hides or skins of cattle, which shall have come from, or shall have been at, any such place as aforesaid."

"And her Majesty, by and with the advice of her Privy Council, doth hereby further order, that all cattle, and all horns, hoofs, bones, and raw or wet hides or skins of cattle, the importation or introduction whereof is so prohibited as aforesaid, and also all hay, straw, fodder, litter, or manure, being or having been in or on board any vessels at the same time with any such cattle as last aforesaid, shall, upon their arrival in this country, be destroyed, or otherwise disposed of as the Commissioners of her Majesty's Customs may direct."

Thus it appears, that although our investigations had, some months since, shown that the statements made in the official despatches of the Consuls were without foundation as to the extent and location of the Rinderpest, cattle are only now to be allowed to be brought in, and many articles of commerce are still to be prevented from reaching our shores. The legislation which has taken place on this subject is a maze far too intricate for us to thread the paths of, with any hope of unravelling its windings or of finding the central object of allurements and research. We do not think that, with the exception of the first few days after the original Order was promulgated, that *any cattle have been kept back which were intended for our markets.*

For all practical purposes, the Order of Council might as well have undergone no alteration, as cattle do not come to England from the Baltic ports; and perhaps it is not too much to assert that not one animal has ever reached us from the Gulf of Finland, or the free city of Lubeck, or

any place lying between these extreme points. If cattle were sent *inland* from either Courland, Eastern Prussia, or Mecklenburgh, for exportation here, they would be put on board at Hamburgh, as the chief port of the Elbe; but strange to say, nothing was done with regard to this port, *even when it was believed that the Rinderpest was raging in Mecklenburgh and Holstein*. The high road was then left open, while the unfrequented by-lanes were closed and guarded, and this state of things is *perpetuated* by the recent Order.

Did occasion exist for any restrictions to be put on commerce, then not only must Hamburgh be closed, but Tonnig also, as the port of the Eider, and Bremen as that of the Weser. We, however, believe that commerce should be set free, and this simply because for upwards of one hundred years England has been a stranger to this disease. The entire continent likewise has been free of it, to speak in general terms, for the last forty-two years, while *eastward* of a line drawn from Memel on the Baltic, to Trieste on the Gulf of Venice, the malady has constantly prevailed with more or less intensity and extent.

Ever since the alteration of the tariff, the now-prohibited articles have been imported, and no ill effects have resulted. This is easily explained. Suffice it to say, that *raw* hides are never sent here, or ever will be, and that prepared skins, even if taken from off animals dying with the disease, are invariably disinfected under the eye of the proper authorities in every country, save perhaps Russia, and with regard to skins coming thence, the very process of converting the hide into leather is an efficient means of purification, and therefore of protection.

Be it remembered that we have passed the great danger. It was when the cattle of Turkey and the Crimea, of our army and of the army of the French, were dying daily by hundreds, and when our shipping was constantly bringing and returning all kinds of merchandise from the East, that the risk was incurred and the danger run. Then, however, the government was supine, and the public mind quiescent and content. Now, indeed, the eye of the latter appears to be blinded by the dust which is cast about by the former. How long will these things be?

Veterinary Jurisprudence.

MANCHESTER COUNTY COURT, July 25th, 1857.

(*Before R. Brant, Esq.*)

WRIGHT *v.* DENSON.

IN this case, which was one for pricking two horses in shoeing, Mr. Cobbet appeared for the plaintiff, and Mr. Fennelly, barrister, for the defendant. Mr. Heath was the solicitor. The action was brought to recover the sum of £13 10s. for damages and loss sustained by the plaintiff through the defendant having lamed two of his horses negligently and carelessly by pricking them whilst shoeing them at his forge. It was sworn by the plaintiff and his men that the horses were pricked, and that blood and *white matter* were both seen to come out of the feet with the nails when the shoes were taken off. One was a black mare, and was shod on January 21st 1854, the other a gray horse, was shod on December 6th, 1854.

It was held by the defendant that these horses were not pricked; that the black mare was lamed in consequence of having trodden upon a clinker and severely bruised the heel of her foot, and that he had attended and cured this lameness; his charge for which was £1 12s. 6d. That the gray horse was lamed from having got the shoe fast, and in some way drawn it off the day after he was shod. That he had also attended this case and cured it, and he finds his charge for it was 9s. 7½d., which had been previously allowed. He stated that these injuries frequently occurred, and that white matter did not occur in such cases; this he would prove by several eminent veterinary surgeons. He had been in business thirty years, and employed none but competent and careful men. He produced his books, and stated that he never made any charge or entry for dressing or attending any horses when their lameness arose from being pricked at his forge, and he was certain these were not cases of pricking or they would not have been entered in his book, and that no other lame horses had occurred belonging to the plaintiff.

James Harrison examined—Is a shoeing-smith; had worked for the defendant five years; remembers the black mare coming with a clinker in her foot; she was very lame; the

clinker was under the shoe at the heel; he showed it to the carter at the time, and requested him to take it home and show it to his master. The carter said, "No, but I will tell him all about it." Remembers the gray horse coming the day after he was shod with his shoe "ripped off," and very lame. He is certain there were no other lame horses belonging to the plaintiff, that came to their place to be shod.

Mr. Greaves, M.R.C.V.S., was then called, and gave evidence that the injuries stated were not of unfrequent occurrence; that the matter secreted from injuries or pricks was never of a white colour at first, but of a dirty-brown colour, and even black if long in the foot and in contact with the nail; and that the treatment employed by the defendant was very proper under the circumstances.

It was further stated by *Mr. Greaves*, in answer to questions put to him by the counsel and the Court, that it was a very frequent occurrence for a horse "to pluck off a shoe" when at work upon the streets of Manchester, especially when newly shod. The calkins at the heels and toe of the shoes are longer at that time and more apt therefore to get fast between the stones. The shoe being thus drawn half off, the nails which are still fast in it stand up like so many harrow-teeth, and at the same time the shoe may be twisted somewhat across the foot, so that when the horse sets his foot down again the nails are forcibly driven into the sensitive parts of the foot, or a similar thing may occur from the clips of the shoe. These injuries are frequently more serious than those which occur in ordinary cases of pricking. He further stated that pricking was a casualty which was wholly unavoidable in many cases, however careful the smith might be. That even in perfectly healthy feet the smith might prick a horse and not know it, although he was paying the strictest attention at the time. The nail, for example, might run higher up the horn than usual, instead of coming out at the place intended. It might likewise bend in the driving, and thus take a wrong direction; or its point might split, and one come out as intended, while the other would enter the sensitive parts of the foot. A man cannot know in every instance that an injury has taken place, as the horse may not evince pain at the time. If, however, the horse flinches the smith instantly withdraws the nail, and either leaves it out entirely or takes a very shallow hold. It often happens that a horse does not show any lameness for many days afterwards; this depending upon the degree of injury. It is impossible to shoe horses with very thin and weak horn without sometimes occasioning lameness, or at least tender-

ness for a short time after each shoeing, and this too when no fault can reasonably be attributed to the smith.

Mr. Moor, M.R.C.V.S., gave evidence confirming *Mr. Greaves's* statements as to the frequent occurrence of these kinds of lamenesses, and that the matter was never white in colour. That the treatment was proper treatment, and that no smith, however careful he might be, could possibly avoid these casualties. He had known horses show lameness at various periods, from the second day after shoeing up to the time of the next shoeing, and for a horse to come back directly after being shod a second time, never until then having shown lameness; when, upon examining the foot, he had found matter concealed in it which must have been caused by the prior shoeing. The new shoe being nailed on tightly was evidently the cause of this lameness, as by compressing the part it caused pain. He further stated that it was quite consistent with a horse being well and skilfully shod that he might, notwithstanding, be pricked at the same time.

Mr. Simpson, V.S., gave evidence also confirming *Mr. Greaves's* statement, as to the frequent occurrence of these cases, and that the matter was never white matter. He also considered the treatment was proper. He further explained to the Court that he was a practical shoeing-smith, having worked in the smithy. He had shod hundreds of horses himself, and had himself pricked many, and that when he was exercising the greatest possible care and attention, and that no man, however skilful or careful he might be, could entirely avoid it. Sometimes a hidden "stump" may cause the nail to take a wrong direction, and the horse evince no pain at the time, so that the man not knowing it could not be blamed.

The Judge having read a passage from *Oliphant's* work 'On the Laws relating to Horses,' page 132, concluded by saying that one of his own horses had gathered a quantity of dirt or gravel under the leather sole, and which, by becoming dry and hard, had caused lameness. He thought, even if it had not been satisfactorily shown that horses were occasionally pricked without the smith knowing it, that the evidence proved it was a casualty that could not at all times be avoided, but in saying this he did not mean it to be inferred that the trade were to practise it. He must therefore nonsuit the plaintiff.

YORK NISI PRIUS COURT, Wednesday, July 15.

(*Before Mr. Baron Watson and a Special Jury.*)

DUNN v. GREAT NORTHERN RAILWAY COMPANY.

Mr. Temple, Q.C., and Mr. Kemplay were for the plaintiff; Mr. Hill, Q.C., and Mr. Blanshard for the defendants.

Mr. George Dunn, the plaintiff, is a horse-dealer, residing at South Cave, and he sought to recover £23 for the loss of a mare on the Great Northern Railway. On the 17th of December last, he purchased the mare in question, for the sum mentioned, of Mr. Bland, of the Old George Hotel, York, and on the following day the plaintiff's son-in-law, Richard Marshall, took her to the railway station at York, for the purpose of her being conveyed to Lincoln.

When the train arrived at Knottingley, Marshall went to look at the mare, and on the door of the horse-box being opened the mare was found lying on the floor unable to rise. An examination showed that she was seriously injured in the spine, and on the recommendation of Mr. Kay, veterinary surgeon, Pontefract, who had been sent for, she was killed.

This action was accordingly brought to recover her value, the injury being attributed to the negligence of the company's servants, in not tying the animal up in the horse-box closer than it was tied. On the other hand, it was submitted that the loss was occasioned by the kicking and unruliness of the mare, for which the Company were not responsible. Before the train left the North-Eastern station at York, a ticket was given to Marshall containing a notice respecting horses, cattle, &c., in which it was stated that the defendants would not be responsible for any loss or injury in the receiving, forwarding, or delivering horses, &c., if such damage be occasioned by the kicking, plunging, or unruliness of the same.

To show that the halter by which the mare was fastened was too long, it was stated that, although the animal was laid, the halter had not snapped, but continued to be attached to her head.

Several of the officers of the railway company were called to prove that the mare was properly tied up, and that she was heard to plunge before leaving the station, and it was owing to that, that the accident was occasioned.

The damage was reduced to £21, Mr. Bland having voluntarily returned the plaintiff £3, but £1 had been paid to the veterinary surgeon.

Verdict for the plaintiff for £21.

DONCASTER COUNTY COURT.

SIMPSON *v.* SAUL.

A curious case was heard before W. Walker, Esq., in the Doncaster County Court, on Tuesday, the result of which would seem to show that no person purchasing a horse is safe, even with a written warranty, unless he takes it to a solicitor to ascertain if the terms are binding.

The action was brought by Mr. T. H. Simpson, of Conisbro', against Mr. T. Saul, of Foxholes, to recover £35 for an alleged breach of warranty.

A horse was bought by Mr. Simpson of the defendant for £54, in November last, and the defendant gave the following written warranty with it: "1856, Nov. 24. Sold to T. H. Simpson a bay horse rising five years old, for £54 Warranted sound. Thomas Saul."

On taking the horse home, Mr. Simpson discovered that it was not what had been represented—he was not up to his work, and was a year younger than had been described. This juvenility was a serious detriment to the value of the horse, as it would have been worth a great deal more if it had been of the age described in the warranty.

The point in dispute was not whether the animal was "sound," but whether or not it had reached the age stated in the warranty. On this point the evidence was very conflicting, and eminent scientific witnesses had been brought together from all parts of the country—for the plaintiff, Professor Spooner, of the Royal Veterinary College, London; Mr. William Field, London; Mr. B. Cartledge, Sheffield; Mr. Mather, Doncaster; Mr. Nicholson, Womersley; Mr. J. D. Peech, Wentworth; and Mr. Brown were called.

For the defendant—Mr. Turner, Tickhill (late of Sheffield); Mr. Charles Taylor, Nottingham; and Mr. Reynolds, Mansfield.

However, the case was not decided on its merits, but on a technical question respecting the warranty. Mr. Smith, on behalf of the defendant, contended that the warranty was one of soundness only and not of age. If it had been intended to warrant the age of the horse the word "warranted" would have been placed before "rising five years old," and not before "sound." The warranty extended to nothing more than soundness—the other part being a mere representation. The Judge held this objection to be fatal, and after some discussion he directed a nonsuit to be entered.

MISCELLANEA.

WHAT'S IN A NAME.

THREE pigs, belonging to Mr. Watson, of Bolton, Cumberland, and which were exhibited at the Salisbury show of the Royal Agricultural Society were named "We"—"Must"—"Win." This proved prophetic, as they did win.

After this, who will ask, "What's in a name?"

LEGISLATION BURLESQUED.

ALL animated nature overflows with gratitude to Lord Raynham. Zoology, ichthyology, and entomology, with paw and fin, with tails and antennæ, bless them. Everything that barks, brays, grunts, crows, or cackles, will be his devoted humble servant in *secula seculorum*. We should not be surprised to hear of his receiving addresses from the menageries, of tabby cats serenading him, of dogs presenting him with their collars, of chickens offering up their little lives for him, of oysters falling in love with him, nay, of smaller and nimbler things becoming at length unanimous, and pulling him out of bed to eat him up with affection. Many lawgivers have legislated for the animal kingdom, but Raynham throws them all into the shade; his tenderness is so general, his legislation so minute and yet so comprehensive. Elephants are not too big for his care, nor mice too little.

Retire, Dick Martin, before the senator who will not tolerate the caging of a bird, the baiting of a hook, the setting of a mouse-trap, or the catching of a fly. Here are a few of the crimes and misdemeanours which this wonderful bill proposes to check by a variety of punishments, including the corporal infliction with which Parliament has repeatedly declined to visit the most barbarous cruelties to women and children:

The packing in any basket or box, or in any other manner, or keeping so packed, any fowl or other animal, so as by deficiency of space or air or other provision to cause distress or suffering thereto.

The desertion or abandonment of any animal, with intent to lose the same.

The unnecessary restraint or disablement of any animal by any means by which more pain is inflicted on it than is requisite for the purpose.

The baiting or worrying for sport of any animal.

The wanton destruction of, or the wantonly maiming, disabling, or causing pain or suffering to any animal.

What the word animal stands for under the act, we are informed in the definition clause :

“The word ‘animal,’ in these acts, shall include any animal, whether domesticated or not, whether of the kinds particularly enumerated in clause 29 of the said act of the twelfth and thirteenth of her Majesty, or not, and whether a quadruped or not.”

The Raynham-protected animal may have any number of feet, and of course any number of teeth or stings, as there is no limitation at all in that direction. The act would protect scorpions, if we had those charming creatures in England. To destroy them wantonly would be a misdemeanour ; to deprive them even of their stings would be no less dangerous, as it would come under the indictment of maiming. Who would venture any more to instruct a pig in the alphabet, or teach a bullfinch to pipe ? Supposing the bill to become law, he would be a bold man who would open an oyster except under legal advice, or desert a kitten, or license his terrier to hunt so much as a rat. We really never met with so ludicrous a piece of legislation. Cruelty to beasts is not to be put down by such a *bêtise* ; but if there be any chance of this measure passing, we would suggest including the Jews in the clause against “unnecessary restraint and disablement.” The Lords would perhaps consent to their relief under Lord Raynham’s bill, for the sake of the contumely of emancipating them along with the pigs.—*Examiner*.

ERGOT IN WHEAT.

To detect ergotized grains in corn, M. Payen gives the following instructions:—The ears affected are distinguishable by many of the grains in it being replaced by a violet-brown substance, almost black, of larger volume and frequently twisted, brittle, having a gray mass inside. The ergot may be distinguished even when no larger than the healthy grain, or when broken into several pieces, not only by its external dark colour, but also by its lightness ; it floats on water, whereas the healthy grains sink to the bottom.

One eighth to one tenth per cent. of ergot in bread may cause gangrene and loss of the limbs, and the poisonous effect is more powerful on animals than on man. In poultry, the phalanges fall off; even the beak is detached. In pigs, the nails fall off, and the animal dies.

The dangers of ergot may be avoided, by properly cleansing the grain, by the hand, by sifting, or by fanning. These various processes would be inexpensive, as the ergot would produce profit, sold for medicinal purposes. (*Journal de Chimie Médicale*, December, 1856, and *Chemist*, January, 1857.)

DEPARTED WORTH.

MEMORIAL TO THE LATE J. SIDDALL, M.R.C.V.S.

IN our closing number for last year we had to record the death of Mr. J. Siddall as "an old member of the profession, and a respected officer of her Majesty's Service." We were willing at that time to add more, but circumstances prevented. This, however, we do not now regret, as it affords us the opportunity of placing before our readers the record of his worth as given by his brother-officers. A monument has just been erected to his memory in Old Windsor Church, which bears the following inscription, and to which it is unnecessary that we should attempt to add a single word, beyond the satisfaction we feel that this honour should have been paid to him whose loss we mourn.

As a just tribute to private worth
And great professional merit,
This Tablet
In Memory of

JOHN SIDDALL,

Is inscribed by the Officers of the
Royal Horse Guards (Blue);
In which Regiment, during a period of 53 Years,
He discharged with zeal and diligence
The duties of Veterinary Surgeon,
And was the last surviving member
of all ranks in the
Household Brigade of Cavalry
Present at Waterloo.

He died on the 2d day of October, 1856,
In the 69th year of his age,
And was interred at the
Church of Old Windsor, in this County.

THE
VETERINARIAN.

VOL. XXX,
No. 359.

NOVEMBER, 1857.

Fourth Series,
No. 35.

THE INTRODUCTORY ADDRESS

DELIVERED

By PROFESSOR MORTON,

AT THE ROYAL VETERINARY COLLEGE.

SESSION, 1857-8.

GENTLEMEN,—I have been accustomed at the beginning of each session to bring before the class any discoveries made in connection with veterinary medicine, during the period that may have transpired between the termination of one course of lectures and the commencement of another; and if I refrain from doing so now the reason is twofold. First, it would be somewhat out of place in an address of this kind; secondly, I am not aware that anything of importance has been discovered since we last met. I speak of course only in reference to our own profession, as science may be said never to stand still. Moreover, it is agreed that the present day is not one so remarkable for the discovery of principles as for their application. It has been, indeed, stated that we live in an age of disinterments, realising constantly the paradox that the history of antiquity has only just begun. And this not only in exhuming cities, and bringing to light records long buried in the sands of the desert, by which truths are confirmed that were once laughed at by the scoffer and the infidel, but there is also a going back to theories long since set aside as untenable; a reverting to explanations at one time considered unsatisfactory. In proof of this I might refer to the various systems of therapeutics extant, each of which has its supporters, and likewise to what has been designated the humoral pathology. It is true the views now entertained may not be so crude as they once were, still it is

believed that the fluids of the body are more frequently diseased than the solids, since the latter derive their origin from the former.

“The humoral pathology which has at all times obtained to a greater or less extent, has, from want of adequate means of illustration, given way in modern days to a system resting upon the more tangible evidence of morbid anatomy; but it is remarkable that since chemical analysis and microscopical research have supplied those desiderata, and shown the *real* nature of many of the morbid changes of the blood, the conviction is every day gaining ground, that it is to that fluid we are chiefly to look for the primary elements of disease, and to it we must address our remedies if we would achieve either the prevention or the cure of those great constitutional maladies, which have hitherto resisted more narrow views and more partial treatment.”

The truth, perhaps, lies between the two, as both the solids and fluids are alike liable to undergo change arising from the existence of disturbing causes in the organism. In like manner we perceive a reverting to the older views as it respects the nature of the electric fluid and of light.

It would be alike easy for me to prove the necessity and to show the advantages of science. An illustration or two under this head must suffice. Had we been ignorant of the laws which govern that inscrutable power electricity, where would now have been its multiplied applications? Although a slight interruption has recently taken place in the laying down of the Atlantic cable, yet, doubtless, we shall soon realise Ariel's fiction of placing a girdle round the world; and by it we shall be enabled to hold almost daily communication with our kinsmen at the antipodes. Some philosophers consider this mysterious agent to be the cause of all natural phenomena, both in the air above and in the earth beneath us. It rules alike the motions of the planets and of atoms, giving rise to gravitation and affinity. It broods in the air, rides on the mist, wanders through space, attracts in the Aurora, and terrifies in the thunder-storm; it governs the growth of plants, and shapes all substances, from the fragile crystals of ice to the hardest of all known bodies, the diamond; it likewise determines the deposit of metallic veins; it can lift a feather, or annihilate a world! Some have even gone so far as to consider it the cause of organization and of life—a mere fallacy! A mistaking of effects for the cause; the abstract nature of which we know nothing, and perhaps always shall be ignorant of. In the time of Geber the chemical process was considered analogous to the vital pro-

cess; and in the thirteenth century the idea prevailed that the vital processes might be analogous to the chemical. Hence arose the absurdity of the philosopher's stone; for it was considered that if metals could be transmuted by it, and all their impurities removed, and as the chemical and vital processes were one and the same, then might diseases be cured by it.

Others think the nerves generate it; but this too, has been by no means proved. Indeed, Professor Huxley has lately shown, in a lecture delivered by him at the Royal Institution, that nerve force is not electricity; but two important facts were cited by him to prove that the nerve force is a correlate of electricity, in the same sense as heat and magnetism are said to be correlates of that force. These facts were, first, the "negative deflection" of Du Bois Raymond, which demonstrates that the activity of nerve affects the electrical relations of its particles; and, secondly, the remarkable experiments of Eckhard, which prove that the transmission of a constant current along a portion of a motor nerve so alters the molecular state of that nerve as to render it incapable of exciting contraction when irritated. These facts, he says, even without those equally important, though less thoroughly understood experiments of Ludwig and Bernard, which appear to indicate a direct relation between nerve force and chemical change, seem sufficient to prove that nerve force must henceforward take its place among the other physical forces.

Again, had the expansive power of steam not been known, where would have been our present modes of transit, our machinery, and our printing press? Where our liberty and our commerce? I am sure I need not say any more on this subject, for you are all familiar with the many ways in which this mighty agent is employed now-a-days. It seems to have become almost necessary to our very existence: as a community it certainly is so.

Some of you will remember that last year I directed your attention to Mr. Bessemer's invention for converting cast-iron into wrought or malleable iron; by which, so it was stated, four times the quantity of that metal could be obtained in one fourth of the time, as compared with the old method resorted to, while it required only one hundredth part of the labour, through the life-destroying process of puddling being done away with. The plan, too, was as simple as scientific, or it merely consisted in forcing atmospheric air through he melted cast-iron; when the oxygen of the atmosphere combined with the carbon, existing in the cast iron, and generated

so much heat as either to separate the other impurities, as scum, or scoria, throwing them off with violence, or to dissipate them in the form of well-known compounds. I have since heard with regret that this ingenious method is not of that practical worth it was thought to be, as by it the metal is rendered granular or crystalline, and hence is too brittle, or it wants "fibre," as it is technically designated. Still I cannot but hope that the appliances of science and inventive genius will soon overcome this difficulty, when a most effective means will be obtained for the manufacture of malleable iron.

I also demonstrated to you the tests for strychnine, and commentated on the supposed cause of the coagulation of the blood, as discovered by Dr. Richardson, namely, the elimination of ammoniacal gas from it; all these being subjects then agitating the scientific world, and consequently brought prominently before the public.

In reference to this last-named subject, it would be somewhat singular, but by no means improbable, if in after ages the honour of this discovery were given, at least in part, to one among us, one whom I have the pleasure of seeing present, Mr. James Turner, the President of the Royal College of Veterinary Surgeons.

In his 'Register of Experiments, Anatomical, Physiological, and Pathological, performed on Living Animals,' which is unfortunately not yet completed, when commenting on the causes of the *vitality* of the blood, as given by different inquirers, he says: "The most difficult problem in physiology which remains to be solved in these enlightened days is the rationale of the coagulation of the blood. . . . Writers of the greatest research have especially pointed to the *vitality* imparted to the blood by its contact with *living* vessels, and thus reasoned on its fluidity. The more I reflect on this theory, the more I am convinced that it is in accordance and association with the retention of a *volatile constituent of the blood*, with which, ere long, we shall find it our business to become better acquainted." Dr. Richardson has made us "better acquainted" with this "volatile constituent of the blood," he having ascertained it to be ammonia. And herein lies the difference between these two experimenters, the one predicts what the other proves; and yet there can be no doubt that each carried on his investigations independent of the other.

After describing the mode of procuring iron, I ventured to express my regret, which I repeat, that the veterinary surgeon should have become a shoeing-smith; this being, in

my opinion, an error at the beginning, and one which has tended to lower the profession, not only in the estimation of scientific men, but the public also. Not that there is anything degrading in the calling in itself considered; "*labor est orare*;" which, in Mr. Carlyle's pointed translation of the apothegm, means, "work is worship." And doubtless, that man who honestly does his duty in the sphere wherein Providence has placed him, fulfils one of the ends for which he was created, and thus, it might be said, he offers praise. But there should have been no interference here. It has aroused a spirit of retaliation; and if it be required that the "eye of science should be over the hand of ignorance," then should each have been separately educated, and a mutual advantage would have resulted.

I am quite aware that in making these statements many that are present will not agree with me; nevertheless, I unhesitatingly give them this publicity, from a conviction that I am right in the view I have taken. In large towns, I know, it is said to be absolutely necessary to conjoin a forge, since he who has the foot gets the body of the horse; "no foot, no horse." Granted it is so, is there not another way of effecting this without the professional man becoming an artisan? Cannot the latter be so relatively placed that it would be to his interest to work in accordance with the dictation of the veterinary surgeon? Then would science as truly become the director of art.

And now let us see how otherwise this junction affects the profession. We have become an incorporated body. The obtainment of a charter was unquestionably a wise act—a step taken in the right direction; and I should be sorry to see any going back here. It has given us a *status* we did not possess before, although all has not been gained from it that was anticipated; for many, perhaps most members of the body corporate, have been looking for certain privileges and immunities. These, it should be observed, we are now, by virtue of our incorporation, in a position to obtain, as we are a recognisable body by the legislature, which we were not before. And possibly the reasons why we have not obtained them may have arisen from errors at the commencement, or a want of union in the profession as a body. But suppose these privileges are obtained, if Mr. A. B., who is a member of the Royal College of Veterinary Surgeons, keeps a forge, he cannot lay claim to them; for while the law exempts the graduated veterinary surgeon it does not the shoeing-smith, and Mr. A. B. answers to both characters. I would, therefore, that a disseverance took place, feeling

convinced that it would prove conducive to the advancement of our profession. Progress in any science or art is often due to what has been termed differentialism, that is, one branch and another being made the subjects of particular study by individuals; the farrier, therefore, should be instructed in the principles of shoeing, and be taught how to ascertain the quality and to know the properties of iron, while the veterinary surgeon should be educated in all those divisions of science that belong to medicine; thus he would be able to take his higher and proper position, since it would be his duty to be conversant with the anatomical structure and function of the various parts of the foot, and to advise what is to be done in cases of disease existing in that organ: thus the two would work harmoniously and profitably together. It may be safely said that the forge is a heavy clog to science, and the noise of its anvil not conducive to the exercise of thought, or favorable to scientific investigations. Besides this, I do know several members of our profession who have never had a forge, nor have they ever regretted it, having succeeded to their satisfaction without it.

There are yet other junctions I could condemn as heartily as I have done this, and some even more so, as I consider them highly derogatory to a professional man; but I fear I should be stepping beyond the bounds of propriety in doing it; nor do I think that I have any right to sit in judgment on the conduct of others. This one, however, being "*ex cathedrâ*," I have felt myself somewhat at liberty to express my sentiments freely upon it. The others I will leave—

"De gustibus non est disputandum."

You will, gentlemen, have already inferred, from what has been advanced, that the education of the veterinary student should be based on science. There is no solid and abiding foundation besides this, and it has always been the object of this School to inculcate principles founded upon it. Now I am not dissatisfied with what has been done, for I rejoice in knowing that a gradual improvement has of late years been taking place here, and I believe what has been effected by the Governors of this institution to be conducive to the best interests of the profession; but we must not stop here. We have only arrived at the beginning of the end. It is true that I have been so long connected with the College as to have witnessed the one lecturer increased to four lecturers, and the three lectures a-week augmented to as many, and sometimes more, in the day; while last session another officer was added to the scholastic department; and beyond

this, all the instructions are now given within the walls of the institution, which was not the case when I first came here. All of this I hold to be gratifying proofs of onward progress. Still, I repeat, we must not stop here, for much yet remains to be done. Your curriculum must be extended, if so be the profession is to partake of the spirit of the age; but if unfortunately it should not, if it lag behind, it will assuredly sink, and be irrecoverably lost as a science; although as a mere art it might struggle on. This, however, would be going back to the dark ages of farriery. Moreover, I am decidedly of opinion that a school should not be the nominal head of a profession, but the actual one. With it all the members should be inseparably connected, and co-operate. From it, from time to time, should issue facts, the publication of which would prove useful to the body; its especial duty being the inculcation of sound principles, which being properly instilled into the mind of the aspirant, we are contented to leave them there, since surely his practice cannot greatly err whose principles are correct. What is called practical knowledge can, of course, only result from time and experience. We should not forget that we are not born with beards: it is by age we acquire them.

But methinks I hear some one ask, Is not our time already fully occupied? Are not three and four lectures a-day, besides infirmary practice and dissections, quite enough for us to attend to? I unequivocally answer, Yes; and I would not impose upon you any more. There must be time allowed for thought and reflection, and for relaxation too; and this leads me more fully to explain my views. It is possible that this is the last introductory address I may be privileged to give; life is very uncertain, and it is with me as the season of the year—

“The scree and yellow leaf of autumn.”

Besides which, I am not ignorant of certain indications that operate as premonitions, and I shall be quite contented when the time arrives to yield my place up to a younger and a more energetic man. I shall take leave then, plainly and boldly to state my opinions, not disguising or cloaking them, being conscious that only one motive actuates me.

I have said the curriculum of your studies must be extended, and that its basis is science. Science has been defined to be “man’s conception of God’s universe.” As such it must be ever progressive. Its cultivation gives to the whole man a new impulse. He knows more, feels more, thinks more, achieves more, and becomes both a greater and

a more elevated being, since his mind—the nobler part—becomes expanded by it, and all its powers are called forth into greater activity. It has many divisions and subdivisions, several of which apply to medicine, and therefore the veterinary student is required to be more or less conversant with them. Thus the principles of hydraulics are seen in the circulation of the blood, and the motion of the fluids of the body. The mechanical powers are exemplified by the multiplied levers and pulleys of the frame; the muscles through their tendons acting upon the bones, and also by the motions of the joints. The laws of optics explain many of the phenomena connected with vision, while the act of progression, and the paces and capabilities of the horse, may possibly receive elucidation by a reference to mathematics. Chemical action, it may be safely said, obtains throughout the whole of the organism; nor can the functions of assimilation, secretion, and growth, be accounted for without it, and it also comes to our aid when those molecular changes occur that give rise to disease. Hence this division of natural philosophy has long had a place in all medical schools, and only very few persons have attempted to gainsay its worth, and those only such as were ignorant of it.

The divisions, however, which I consider as necessary to be added to your curriculum, are *Practical and Agricultural Chemistry, and Botany*; and the plan I would suggest for their introduction is simply that of giving a *Summer Course of Lectures*. I really think from May to October is too long a period for the mind to be allowed to lie fallow, since, I feel assured, that rarely students devote much time to study when at home. They have no incentives thereto, and the consequence is, that during the vacation much that has been acquired by them is forgotten. The hiatus may therefore be profitably filled up. Nor would this arrangement increase the length of the time at present demanded by the College, as one course of each of the above Lectures would be enough, and they would be given between the two winter courses. More clearly to explain. During the Winter Session, Lectures on the Anatomy, Physiology, and Pathology of the Horse and other domesticated animals, with the Principles of Chemistry as applied to Medicine and Agriculture, should be delivered; and these with clinical instructions, infirmary practice, and dissections, would appropriately fill up your time. During the Summer Session, instructions in Practical Chemistry, and lectures on *Materia Medica*, and Botany should be given; and as at this period there are more patients in the infir-

mary than during the winter months, an admirable opportunity would be thus afforded to those students who have not seen practice before coming here of acquiring practical information.

Further, by transferring the lectures on *Materia Medica* to the summer, more time will be allowed for those on Chemistry, this being now very restricted, so much so indeed, that justice is not done to the subject. And then as both the teacher and the taught will require relaxation, between the winter and summer courses a short period should be allowed for that purpose.

As it respects Practical Chemistry, this is no longer considered a supererogatory study, but an integral part of the education of the medical student. By it he is taught to manipulate, and thus he becomes acquainted with chemical substances; and he is also instructed in the conduction of analyses and the detection of poisons, all of which it is unquestionably very important for him to be familiar with.

Then there is one division of Chemistry, namely, Organic Chemistry, which may be said to be of the greatest value to the medical man, and therefore demands from him a corresponding attention. Such have been the advances made in this of late years, from the ever-varying and almost numberless discoveries made in it, and from the light it throws both on physiology and pathology, that it may almost be designated a new science. It cannot be denied that the first step towards the cure of a malady is a knowledge of its nature. This is often only to be arrived at by an observance of the alterations of the products of the organs that are either primarily or secondarily affected. Now it is the province of chemistry to tell us what these products are, and to show the changes that have taken place in them; and this being obtained, frequently the means to be adopted so as to bring about a restoration to health, are by chemistry clearly pointed out. But of course not always, for then the removal of disease would be a certainty.

In a notice of Dr. Daubeny's address, delivered before the British Association for the Advancement of Science, in 1856, it is stated that—

“In organic chemistry, there are certain compounds which it has hitherto been the favorite doctrine to suppose only producible by the vital force. Within the last few years, several of these have been formed in the laboratory by art; and very recently, as we learn from Dr. Daubeny, some others have been produced—several species of alcohol from coal-gas by Berthelot, oil of mustard by the same chemist,

and taurine, a principle elaborated in the liver, by Strecker.' This is not merely interesting, as illustrative of one of the profoundest mysteries of nature, but it is valuable, as giving a hope that certain highly useful, but rare articles of nature's laboratory may yet be formed in man's. 'If quinine, for instance, to which Peruvian bark owes its efficacy, be, as it would appear from recent researches, a modified condition of ammonia, why may not a Hofmann be able to produce it for us from its elements, as he has already done so many other alkaloids of similar constitution?' The learned doctor even glances at a possible artificial substitute for coal. Why not add, bread? Meanwhile, 'chemistry has given token of her powers, by threatening to alter the course of commerce and to reverse the tide of human industry. She has discovered, it is said, a substitute for the cochineal insect in a beautiful dye producible from guano. She has shown that our supply of animal food might be obtained at a cheaper rate from the Antipodes, by simply boiling down the juices of the flesh of cattle now wasted and thrown aside in those countries, and importing the extract in a state of concentration. She has pointed out that one of the earths which constitute the principal material of our globe contains a metal, as light as glass, as malleable and ductile as copper, and as little liable to rust as silver; thus possessing properties so valuable, that when means have been found of separating it economically from its ore, it will be capable of superseding the metals in common use, and thus of rendering metallurgy an employment, not of certain districts only, but of every part of the earth to which science and civilisation have penetrated.'

I need hardly add that this metal is *aluminium*, first ascertained to exist by Sir H. Davy, in 1808; although its true nature was not demonstrated by him. As yet, it cannot be said to be available for commercial purposes, nor does it possess all the valuable properties that have been attributed to it; nevertheless, its obtainment from ordinary clay is an interesting chemical fact, whilst its source is inexhaustible.

Sir J. Kay Shuttleworth, in his address on the Progress of Medical Science, says: "The researches of Liebig and his school into the chemical constitution of organic fluids and structures, and on the nourishment, growth, and decay of living bodies, and those of Dumas and Boussingault on the Balance of Organic Life, concur in laying the only true scientific basis of a chemical pathology. To these have succeeded the researches of Bernard into one of the functions of the liver in supplying the blood with sugar, which probably

plays the same part in the animal economy in the production of heat, as sugar and starch do in the like process during the germination and budding of plants. The observations on the power of the pancreatic juice in reducing fatty matters, are in the same line of investigation. . . . The French and German chemists have, of late years, entered on a common path of analysis and inquiry, which tends towards the gradual revelation of the secrets of a chemical pathology. . . . All the forces of the several structures of the body are dependent upon their chemical constitution, and on that of the health of the fluids, by which their health and power are sustained. Each vital organ is an apparatus, in which the chemical laws and atomic constitution of its parts are instruments, operating under the new conditions of life, for objects which each distinct animal or vegetable is intended to accomplish. If any tissue, or any fluid feeding a tissue, degenerate, the phenomena of life are disturbed. If we had the analytic power needed for the definition, we should find that chemical changes occur in every disease, both in the solid structures and humours of the body." I adduce these facts to show you the bearing of chemistry on your studies, for the artificial formation of organic compounds is at the present time a favorite pursuit with chemists.

Another circumstance that very remarkably influences the chemical properties of some bodies, without in the least changing their nature, the cause being supposed to be dependent upon an altered molecular arrangement, is ALLOTROPY. The most remarkable substances thus affected are, perhaps, oxygen, carbon, sulphur, and phosphorus. The last-named is capable of existing in no less than five forms, each possessing its characteristic properties. If it be heated to a temperature of about 44° , it becomes altogether changed in its characters. It may be handled with impunity, is of a dark-red colour, and not inflammable. If, however, it be now heated a hundred degrees higher it melts, and again assumes the appearance and properties of ordinary phosphorus.

The singular substance, *ozone*, is proved to be an allotropic form of oxygen. There appear to be strong reasons for believing that many of the nitrogenized organic bodies which constitute so large a portion of the food and tissues of animals, are only allotropic forms of one and the same substance, since chemistry has not been able to detect the slightest difference in their composition. The student, therefore, must not think that science merely enlarges and complicates that which is known—increasing the number

of facts without producing any practical advantage; contrariwise, it simplifies that which is already discovered, and renders it more easy of comprehension.

Of late years, you are aware that the microscope has been called into requisition, both in chemical and anatomical investigations; and with considerable advantage, since by its aid is accomplished that which chemical analysis alone would otherwise have failed to effect. We see this in ascertaining the character of urinary and other deposits, the nature of morbid or abnormal growths, and especially in those inquiries into adulterations of food and physic now so extensively carried on, and which have been so admirably exposed in the pages of the *Lancet*. It would be altogether uncalled for to dwell here, as its value is so obvious.

Time would fail me to tell you the advantages to be derived from a study of Botany. Not a session passes but inquiries are made of us as to the probability of such and such plants having proved injurious, and oftentimes our replies are at best conjectural. The archives of veterinary medicine are rich in illustrative cases of the action of certain vegetables upon animals, and to these I must refer you. I am inclined to think that this science would prove of even greater benefit to the veterinary practitioner than to the human, as the majority of his patients are herbivorous. Although nature has given to animals instinct, by which they generally refuse that which is noxious to them, yet accidentally a poisonous herb may be partaken of by them, or it may be maliciously administered; and hence an acquaintance with this science is rendered desirable, if not absolutely necessary.

Unquestionably, the summer is the only time in which it can be advantageously studied; and as the gardens of the Royal Botanic Society are so near, to which I doubt not, on proper application being made to the authorities, admission would be granted under certain restrictions, every facility becomes thus afforded for its introduction.

As a confirmation of what has been advanced by me, the following may be adduced:

“Perhaps until recently, the chief importance of botany to medicine consisted in its teaching the properties of different plants and their employment in different diseases, but now this science is assuming a very different position in medical studies. Not only is the study of physiological botany and the processes of nutrition in plants, of the greatest importance to the right comprehension of the manner in which similar functions are performed in animals,

but many of the most obstinate maladies which affect mankind are due to the growth and propagation of some of the lowest species of plants. It is now well known that many varieties of skin-disease, especially the various forms of ring-worm, are associated with the growth of microscopic fungi. The botanist can now claim many of the lower forms of beings, which until very recently have been classed in the animal kingdom. The power of locomotion, which was formerly considered as one of the distinctive characters of animals, is well known to exist throughout whole tribes of the lower plants, and even the active and rapidly moving *volvox globator*, by the discoveries of Williamson, Carpenter, Busk, and others, has within the last few years been clearly proved to belong to the vegetable and not to the animal kingdom."

Nor should plants be studied only in their healthy or natural state by the veterinary surgeon, but also when they are affected with disease; for who can assert that many maladies are not by this means produced in animals? This we do know, that ergotized grasses have caused abortion in cows; and numerous instances are on record of a peculiar conditional state of the vegetable giving rise to effects altogether different from the specific action that would have otherwise taken place.

Under this head I may be permitted to quote from Gilbert Burnett's 'Outlines of Botany.' Speaking of the *Cicuta virosa* or *Cow-bane*, he says: "It is a very poisonous plant to men and some animals, such as kine; although others, such as horses, sheep, and goats, feed on it with impunity. In the moist pastures of Sweden, it used to occasion a yearly plague amongst horned cattle, until the cause was pointed out and a preventive suggested by Linnæus. When full grown, the odour is so strong that the cows avoid it, but when young, the smell is so faint that they eat it indiscriminately with the other herbage, amongst which it abounds. Linnæus, therefore, recommended the graziers to keep their cattle in the upland pastures until the cow-bane was well grown, and then they might be driven to the lowlands, as their instinct would prevent them touching the plant. His advice was taken, and their annual losses, which were immense, from that period ceased."

Allied to this, comes the important and interesting inquiry—What influence have the many artificial manures, now so largely used, on vegetation in reference to the production of diseases? Were I called upon to answer the question, I should be inclined to say—much, either by their

impregnating the plant with that which is foreign to it, or by inducing a peculiar conditional state of it. Especially do I think they often give rise to urinary affections, as the kidneys are the organs by which all the soluble salts are eliminated from the system, and I believe I have traced the existence of the compounds of lime in excess in urine to plants grown on soil too freely and recently limed.

Science of late years having been extensively applied to agriculture, it becomes a matter of some moment to be acquainted with the consequences resulting therefrom, as on this may depend the health and well-being of thousands, or the converse may obtain. In all probability, the cultivation of the soil forms the only real basis of a nation's wealth: trade and commerce being the offspring of necessity, rather than of choice. It has been thought it will ultimately become the prominent employment of mankind, as it was unquestionably the first occupation of man. After his formation, we are told, he was placed in a garden to till it. The patriarchs also followed it, becoming agricultural nobles, while kings have not thought it an employment beneath them. Some of you may have read that the wily false prophet sent with great pomp a plough, as a present to the Dey of Algiers, averring it to be the true philosopher's stone. Nor was he far short of the mark; industry being the real talisman. In an almost exhausted soil, like that of the greater part of England, it is perhaps absolutely necessary that these artificial stimulants, in the shape of manures, should be resorted to by the agriculturist, so as to enable him to compete with other countries, and to furnish food for his numerous flocks and herds. Nevertheless, the question arises—May not this forcing system be carried too far? There is no questioning the fact that an over luxuriant state of vegetation thus induced changes, more or less, the normal textures of the plant; and an undue development being given to some parts over that of others, the consequence is, the peculiar principle of the vegetable, on which its value depends, becomes altered in its constitution, and therefore in action. This is frequently seen in the cultivation of wild plants for medicinal purposes. We also know what follows in the animal organism after an undue use of stimulants, namely, a more than commensurate degree of depression, which calls for a repetition of the excitant; and this being continued, it eventuates in disease either functional or organic. The like may possibly take place in the vegetable. I must, however, leave this debatable ground, referring you to what was stated by my colleague, Professor Simonds, in his

inaugural address, delivered last year. And this I might have done before, only I was desirous of showing that a oneness of opinion exists between us on the subject.

To practitioners of veterinary medicine in the country, the collateral sciences of Agricultural Chemistry and Botany will prove both interesting and profitable. As they are proceeding to visit their patients, every field they pass will awaken some thought respecting the character of the plants growing there, the nature of the soil, and the probable result of the adoption of a certain mode of culture, or the employment of certain manures. They will also be frequently interrogated by the scientific agriculturist, should disease show itself in a locality, as to its probable cause; and as this very often arises from the food partaken of, in which changes have taken place that they can readily account for through an acquaintance with these sciences, so they will advise the adoption of such measures as will prevent a recurrence, thus ensuring the confidence and continued support of their employers.

It is as much a mistake to suppose that there is any loss sustained by thus acting, as it is that the duty of the veterinary surgeon is not to prevent as much as in him lies, by the timely use of prophylactics or other preventive measures, the outbreak and spread of a destructive epizootic. Man is a social animal. "Love thyself last," is the admonition of the sage. I would ask—Has the profession been advantaged by the continued prevalence of pleuro-pneumonia? Or, have the resources of science yet discovered a remedy for it? And is not this, in the opinion of some persons, who are ignorant of the nature of the disease, considered an opprobrium to medicine? He may not, it is true, be able to stand up between the living and the dead, and stay the plague; but 'tis his to alleviate the sufferings of animals placed under his care, lower in the scale it is true than man, but equally with him objects of the Creator's care, for He has told us so. A sordid love of gain is not, and should not be, his incentive to action, but the nobler philanthropy of doing good. Frequently, alas, he finds all his efforts are in vain, and often he has to contend with the charlatan, who boastingly asserts he has a specific for the evil—

"Fools rush in where angels fear to tread."

and "putrescence always gives life to a host of loathsome maggots."

Now, gentlemen, in what I have suggested as additions to your studies, it will be remembered I speak not by autho-

city. It is not mine to be so privileged. What I have adumbrated may "like shadows come, and so depart." I have simply given to you my convictions of what must in time take place here, and "there is a time for all things under the sun," and having already witnessed the introduction of so many improvements, I hope to live to see others follow them.

Believe me when I say it is from no love of innovation, or a craving after novelty, that these propositions have been made by me—in truth there is hardly any novelty in them, analogous ones having been before suggested—but from a sincere desire to aid in the advancement of our profession. During my long connexion with it, I have observed with regret, mixed with no little surprise, that it is not so highly estimated by the public as it merits; and being of opinion that its closer alliance with some of the other sciences, by their introduction into your curriculum, would render it more so, I have not hesitated to give full expression to my views; and I am gratified in knowing that these are strengthened by similar ones having been enunciated by Professor Spooner, at the meeting of the Council of the Royal College of Veterinary Surgeons, held in December last, when he said, "If the examination fee were reduced, the Royal Veterinary College might be in a position to *appoint an additional teacher in some other branch of science*. And he asked, whether that would not be an advantage to the pupil, as well as a means to increase the reputation and efficiency of the college." This, I confess, I was glad to hear. Nor am I travelling out of the road in making these propositions. It was evidently intended by the founders of this institution that summer lectures should be given. In an old volume, bearing date 1791, which I have lately seen in the library of the British Museum, bound up with other odd pamphlets, are the "Proposed Regulations for the Veterinary College," issued during the professorship of Mons. St. Bel.

It is neither my intention nor desire to comment on the "distribution of the studies" then determined upon; suffice it to say that they were divided into eight courses, and these extended over a period of three years; this time being thought "sufficient for a complete education, provided the pupils are capable, assiduous, and well inclined." When "having completed their studies, they shall undergo a publick examination in the theory and practice of every branch of the veterinary art, and those who shall be considered as perfectly instructed therein, shall receive a certificate signed by the Professor, and confirmed by

the Council." My object is to refer to the fourth and fifth courses, which are as follows, premising that the lectures on materia medica were included in the third course.

"Fourth Course.

"The pupils shall attend a course of pharmacy, to obtain a knowledge of the different preparations. They shall divide their morning between the dispensary and laboratory.

"Fifth Course.

"A knowledge of the common plants and herbs being necessary to the veterinary physician, the pupils shall attend a course of botany relative to veterinary medicine. This course shall take place in the afternoon, and shall, as well as the preceding, continue during the summer."

I have no doubt valid reasons could be assigned why these resolutions were not fully carried out, a circumstance not recognised by cavillers; still, I am sure they were framed in judgment, with a knowledge of the wants of the profession, as well as that they would tend to promote its onward progress, and ultimately enhance its worth and estimation.

To what I have stated allow me to add, I would not wait for the pressure from without to bring about these changes. Schools should assume the initiative. As it is required of the teacher to be in advance of the taught in knowledge, so is it necessary that schools should take the lead in introducing that which in their judgment they may consider to be conducive to the general good of the profession as a body.

To a certain extent, it may be conceded that it is wise to let well alone; but when all around us is progressing, to stand still will be simply showing that we are ignorant of what is taking place, or asleep at our posts. Even conservatism will admit all that is needful in the way of change, so as to maintain the integrity of the social and political economy. Burke once said, "Reform delayed is revolution begun." It is, therefore, insane to dread innovation, and withhold consent to the adoption of measures pregnant with good.

Education on all sides is making rapid advances. In proof of this, notice the many varied plans devised for the diffusion of knowledge. Are we not lighted on the days spoken of by the prophet, when "many shall run to and fro, and knowledge shall be increased,"—the beginning of the end of Time? Let us then be up and doing; not being

laggards, but aiding the onward march, as it is only by so doing that we can hope to maintain our position in society. This is a period of restless activity, and unless we keep pace, we shall soon be left in the distance. I have already said I am no advocate for innovation unless I see its necessity, and this I think I do; therefore, it is, I have suggested those helps to mind-progress, and am very desirous that with this school they should originate. Depend upon it the love of innovation and the dread of it, are equally remote from true policy.

Having thus glanced at the present state of the profession and its probable or anticipated future, permit me now to offer you, as students, a word or two of advice, for we are not ignorant of your wants, nor would we be oblivious of your interests. This, in my opinion, should constitute the greater part, if not the whole of an introductory address; but as others favour us with their presence on these occasions, so the subjects chosen are commonly of a general nature. We feel gratified by their being here, and encouraged, since they thus give proof that they feel an interest in our well-doing; and in my own name and the names of my colleagues, I beg they will accept our acknowledgments.

And now, addressing my younger friends in the way of admonition, after having welcomed them to their studies collectively, I would first do so by an appeal to their moral responsibility, then enter somewhat into the details of their studies, and close by pointing out the advantages that are sure to result from consistency of conduct and correct deportment being maintained by them throughout life.

Under the first head, permit the following extract:

“Man, viewed as a sentient, passing, perishing creature, has in this world a destiny to fulfil, a task to accomplish, efforts to put forth and to repeat, necessities to satisfy, faculties to be developed, capacities to be ever enlarged and improved. But there is another aspect in which man must also be viewed, and in which other conditions of action come into play. Viewed as a *spiritual* being, he entertains the idea of immortality, and feels a consciousness that his soul, an emanation from God, shall after its period of pilgrimage is over—a pilgrimage of mingled sorrows and joys, good and ill—shake itself loose from its earthly entanglements, and return again to the bosom of that God, sanctified by piety and love, purified by repentance, and ennobled by the achievements and triumphs of thought.

“View man in the first of these aspects, and we see him analogous to the animals that surround him. The *plant*

grows, covers itself with the pomp of flowers and leaves, which a bounteous nature has bestowed upon it, breathes away its soul in fragrance, and dies; or renews itself indefinitely in its shoots, destined to the same life, the same florescence, reproduction and decay. The plant lives, for in the circulation of its sap, the respiratory functions of its leaves and flowers, and the reproductive power of its seeds, it fulfils all the conditions of the peculiar phase of life it has received from the creating hand of God. The *animal* moves, seeks its food; whether, to supply these necessities, it roams the field, searches the thicket, or cleaves the air or flood; it has its peculiar habits, instincts, and generic conditions of organization, alimentation, reproduction, moving power, life. The animal lives, but it has no power of progress or indefinite perfection. It is enough for it to possess instinct, agility, strength. It lives, reproduces itself, and *dies*, in the fullest sense of the word.

“Not so man. Possessed of animal life, in a higher sense than any of the other living creatures—his heart a sponge, which absorbs and appropriates every sensation, and exacting from it service, whether for good or evil; he has, in addition, the power of indefinite advance, and of turning all to account in the attainment of this end. His knowledge is not that vague perception called instinct. He sees things clearly, has the faculty of foresight, can calculate and provide for the future, has remembrance of the past, will, judgment, hope, in whatever situation he may be placed.

“Thus formed and endowed, man feels himself to be lord of the creation, and at once comprehends that all which surrounds him is destined to minister to the innumerable wants which attach to or arise from his peculiar organization, his compounded physical, moral, and intellectual nature. Hence his right to the unfettered enjoyment of *life*, and means to preserve it; the power of acquiring *property*; of *moving* whither he will; of indefinite *development* of all the powers and faculties conferred upon him—in short, of *liberty*, without which it is impossible for him to exercise the faculties bestowed upon him, and fulfil the mission intrusted by God to the human race. Man is not an isolated being. Multiplied in millions and millions of similar beings, he forms successively the family; the social circle; the wider circle of the district, the province, the nation; the race; humanity. It is to this congeries of beings, which is summed up in the general term *society*, that has been committed the task of the development of man, viewed as a sentient, earthly, perishing being.

“But in the organization of this complex being, Man, there is an element of far greater importance than his mere sentient nature. This it is which ennobles him; which separates him from the rest of the material creation; which marks him out for an immortal destiny, and links him with God. This wonderful principle is *Thought, Spirit, Soul*—a Divine inspiration, which has a destiny above and superior to that which can but live, feel, reproduce, die. This it is which gives to man his superiority over all else that exists; which gives him the idea of the beautiful, the great; which points him out as destined by Providence to preside over the onward movement of humanity: which, in the hour of the final destruction or transformation of all that is material, shall mount upward towards the regions of hope, and lose itself in the unfathomable mystery of immortality!”

Thus you see on what your responsibility rests. You can no more evade it than you can cease to be; and as the future stamps the man, so the present may be considered the most momentous period of our lives. Depending on what our desires and affections are set, so will be our conduct. The object of worship always determines the character of the worshipper. Those who worship Baal-peor, will become libidinous, and those who worship Moloch will inevitably become cruel. It, therefore, is now your duty so to act as to obtain knowledge. This should be the only object kept steadily in view by you. Locke has appositely remarked, that, “the great business of education is not to perfect a learner in all or any of the sciences, but to give his mind that freedom, that disposition, and those habits, which may enable him to attain any part of knowledge he shall apply himself to, or stand in need of, in the future course of his life.” Few of you, I fear, give this the consideration it merits, while too many think that what they have to do while here is simply to get the diploma. Take my advice, get knowledge, for by so doing you will insure the possession of your diploma. And get as much as you can, remembering it is only to will the thing, and it is done.

Self-culture will do much towards this, but at the present day there are so many aids to the acquirement of information that it is a disgrace to be ignorant.

(To be concluded in our next.)

Communications and Cases.

DEATH OF TWO HORSES, AFTER THE ADMINISTRATION OF A DOSE OF CATHARTIC MEDICINE TO EACH.

Communicated by J. KENT, M.R.C.V.S., Bristol.

DEAR SIRS,—I forward to you the copy of a correspondence that has recently taken place respecting the death of two horses, the supposed cause of which was the exhibition of a dose of cathartic medicine to each. You are at liberty to insert the same in your journal.

Yours truly,

To the Editors of the 'Veterinarian.'

PONTYPOOL; Sept. 15th, 1857.

DEAR SIR,—I have had the care for the last two years of two horses belonging to Mr. Alexander Edwards, of this town. They have been kept in loose boxes all the summer, fed upon vetches, lucern hay, and oats, and were in excellent condition, but rather too fat for hunting. I therefore considered a mild physic ball would be of service to both of them; and on Tuesday, the 1st instant, I got some bran and mashed them until the following Friday evening: thus they were well prepared for the medicine. Mr. Edwards obtained from a druggist in this town two balls, one containing five drachms of aloes for the largest mare, seven years old, and one three and a half drachms for the other mare. These balls were given on Friday evening, between six and seven o'clock. At eight I did the horses up; gave them a mash, and placed a bucket of cold water before them; the *same as I had always been used to do*. They did not eat anything, but appeared to be very thirsty. They were in high condition and a full state of health until these two balls were given them. The brown mare died, much swollen, on Sunday evening, about half-past eight; after a dose of three and a half drachms of aloes only given to her, and which operated but little. Upon opening her, the stomach was found much inflamed, but in all other respects the internal organs were quite healthy.

The bay mare died on Monday evening, about a quarter past six. Five drachms of aloes were given to her at the same time as the other mare, which operated the next morning, and continued to do so to such an extent that wheat-flour gruel was given to her several times, also a drachm of opium in gruel. Upon being opened, her stomach, lungs, heart, and intestines were all found considerably inflamed.

As some persons say the cause of death was giving them cold water, which treatment I have generally followed during the time I was with you and since, I shall feel greatly obliged if you will inform me whether it is your opinion that two small doses of aloes, such as I have stated, would have caused inflammation, and killed two horses, when only the bucketful of water was given them at night, and the same the next day; especially as they were always accustomed to have water left with them. When I saw the medicine operating, I took the cold water from them. Their thirst was intense. Please to state particularly what has been your practice as to cold water, and whether you ever knew horses die in the same state as described. They were never griped to the last moment, nor ever struggled. An answer will oblige, as it will be a great satisfaction, both to myself and master. With best respects,

I remain, your obedient servant,

ZACHARIAH HUGGINS.

The stomach, with part of the intestines, was sent to Mr. Herapath. I send you a copy of his reply, in which you will see in the second of his "chances" that blame is thrown upon me. This I deny, as I consider their death to have been caused by something put in the balls.

To Mr. JOHN KENT, V.S., Bristol.

(COPY.)

BRISTOL; *September 12th*, 1857.

SIR,—On inspection I found the stomach and intestines of your animal inflamed sufficiently to cause death. And this, connected with your detail of circumstances, leaves scarcely any doubt on my mind that the death was in some way or other dependent upon the administration of the medicine. In analysing the remains, I sought for all the ordinary poisons resorted to by the malicious poisoner; therefore, such as are sometimes the cause of death from the ignorance of a groom, and, also, such as we have means

of detecting amongst adulterated or substituted drugs; but there was no trace to be found of either. The only substance found, not mentioned by you, was an oil of some sort, which I cannot identify, it being too small in quantity. I think it right to add that a Mr. Thomas Roderick, has sent me from Pontypool four substances for analysis, which from his statement, and from his locality, I judge to have been used in your balls. In these I find nothing likely to cause the death of a horse, either in quantity or quality. There remain only three chances of death and no discovery. First, the length of time occurring between the administration and death (three days), which still would have enabled me to find metal or minerals in the liver. Secondly, improper treatment by the groom, as I have known death to occur with not a large ball, if a large quantity of cold water was given immediately after. And thirdly, a substitution by mistake of one medicine for another by the dispenser, such as Croton oil for another variety. At all events, as I cannot find the poison, it is useless to speak of chances.

I remain, sir, yours respectfully,

WILLIAM HERAPATH.

To ALEXANDER EDWARDS, Esq., Pontypool.

BRISTOL, *September 17th*, 1857.

SIR,—From the copy of Mr. Herapath's letter you have sent me, it is perfectly plain that he writes learnedly on a subject respecting which he is perfectly ignorant, and sits as judge where he would have acted more prudently and wisely had he acknowledged his perfect ignorance of the proper treatment of horses during the operation of carthartic or purgative medicine. He says "I have known death to occur with not a large ball, if a large quantity of cold water was given immediately after."

This is a mere gratuitous assumption of Mr. Herapath, and which I can abundantly disprove (that is if he means to say that it is a necessary consequence from drinking cold water) by thousands of cases. My regular practice is, and has been for more than thirty years, I believe forty, to give cold water. And in the case of cart-horses, to give the ball on Saturday morning, and let the horse work all day, whether it rains or not, and drink cold water; and I never had a horse die or made ill by it in the course of that time. Would not Mr. Herapath have acted with more discretion had he adopted the same course in reference to treatment as

his concluding sentence exhibits as to poison? "At all events, as I cannot find the poison, it is useless to speak of chances." There is not a shadow of doubt on my mind but that the inflammation and death of the horses in question were caused by something in the medicine given, whether Mr. Herapath could find it or not, and not by the cold water.

JOHN KENT.

To Mr. HUGGINS.

ON SOUNDNESS AND UNSOUNDNESS.

By R. H. DYER, M.R.C.V.S., Waterford.

IN the last volume of the *Veterinarian*, page 648, an article headed "Too much Science," appeared from the pen of a gentlemen well known to most of your readers, viz., Mr. J. Hawthorn, V.S. of Kettering. It contains many useful and practical remarks with reference to a most important branch of our profession—"Soundness," &c.

This letter was succeeded by one from Mr. S. D. Gregory, of Biddeford, whose cases are very interesting and much to the purpose; particularly Case 1, subject, "*Splint*."

The next writer is Mr. Charles Dickens, of Kimbolton, whose letter is chiefly occupied with remarks upon a consultation between himself and Mr. Hawthorn. This gentleman relates, however, a case of value to us "*Vets.*;" but I cannot exactly see that a veterinary surgeon can be employed in the same way as an agent or broker in the purchase of land. There is in respect to horse-flesh something different to most other things offered for sale. It is somewhat difficult to convey one's ideas upon a sheet of paper, as to what is really this difference, but there *is* a difference to all intents and purposes. In the first place, every person who knows a horse from a cow, thinks he is wise in everything concerning horses. Even a boy of twelve years old, if he has ridden a pony a few miles upon the road, or a young man who has ridden a few times over a country, and has been so fortunate as not to break a bone, if he can call his steed his own, commands his groom to do his bidding in the stable, and pays his farrier's bill. These things will certainly cause such a tyro to imagine he is a perfect horseman, as well as learned in everything relating to horses, not even excepting the manifold diseases to which the horse is liable.

All this, and much more, persons of this class will talk about, to the astonishment of their superiors in age and experience. I do not think I have overdrawn the picture, for these things are constantly occurring under my own observation. I would, then, repeat there is much difficulty with *all* matters relating to horses, and it becomes absolutely necessary that the profession should be relieved from much that is objectionable as regards the soundness of horses.

Mr. Hawthorne, in the number of the *Veterinarian* for the present month (October), has again brought the subject before your readers. The paper contains some hints which can easily be acted upon. Whether non-professional men should be invited to attend or not, is a question admitting of some consideration. I am of opinion there are many non-professional men who are as fully capable of giving a decision upon the usefully sound animal as a veterinary surgeon; and such, therefore, would give some very valuable hints in the framing of laws upon the soundness or unsoundness of horses.

The 'Law of Horses,' by Oliphant, treats rather largely upon soundness and unsoundness. With your permission, I will make a few extracts from that work. 1st. It is remarked, at page 51—"We may define a horse to be sound *when he is free from hereditary disease, is in the possession of his natural and constitutional health, and has as much bodily perfection as is consistent with his natural formation.*" Again, at page 53, a judge states—"I think the word 'sound' means what it expresses;" and Mr. Baron Alderson said—"I am of the same opinion. The word 'sound,' means sound."

That these opinions are very good no person will doubt, but of what value are they to us "Vets." in practice? If I reject a horse because "*he has a pimple on the skin just at the point where a bridle is placed,*" my employer would consider I was splitting hairs. I do not state what the seller of the horse would say. Again, "*a horse may have a cold, which may be cured in a day;*" and so on. Would that we managed to get rid of a cold upon such short notice! It will be observed, these sayings are extracted from the work before alluded to merely to show the impracticability of the law as there laid down.

The first disease I will notice as contained in that work, by way of illustrating my meaning, is that of "*Bog Spavin,*" not a very scientific term. It is said, *they generally produce lameness, and constitute unsoundness.* If all horses with enlarged bursæ were rejected as being unsound, very few indeed would be passed as sound.

"*Corn*" is a very difficult question. I have heard so much about this affection, that I am heartily tired of the word. An old gentleman—a good horseman and a sportsman—told me he would rather have a broken-winded horse, than one *with a corn*. Another gentleman—some years younger, an army man, a good rider, and a forward horseman—said "he did not care a dump for corns."

"*Curb*."—A whole volume might be written about this disease. As many horses with curbs travel sound as unsound.

Enlarged Glands, "parotid."—How few horses are free from this. At page 71, it is written:—*There is scarcely a malady to which the horse is subject which is not hereditary.*

The next subject I will refer to is *Splent*.—Oliphant states, page 83,—"*it entirely depends on the situation of the bony tumour on the inside of the shank-bone, whether a splint is to be considered an unsoundness.*" With reference to splent or splint, I know of no disease to which the horse is liable so frequently met with as this. A great many horses are examined by me in the course of the year, and but few are free from splent of some growth. This, then, is one of the diseases which should meet with most especial consideration.

Since writing the above, a gentleman has consulted me upon a case of *Splent*. It seems that he purchased a horse from a horsedealing veterinary surgeon who warranted him perfectly sound *four days ago*. Yesterday the horse was observed to be very lame. This day the *dealer* examined him, pronounced him lame from splent, and prescribed a lotion and a few days' rest, which has certainly caused the purchaser to feel mortified. This case leads one to the conclusion that however sound a horse is at the time of purchase, no person can tell how long he will remain so. My own impression is that, *a horse to be sound should have no disease whatever about him in any shape or form.* If a splent, spavin, ringbone, curb, or any other affection be present, at the time of purchase, that animal is, to all intents and purposes—*unsound*. The opinion of the veterinary surgeon can be taken as to the probability of lameness, or any other disease interfering with the usefulness of the animal in question. This case also shows how undesirable it is for veterinary surgeons to be horse-dealers.

Cataract, "spurious."—I have known horses rejected for small specks upon the transparent cornea; others with a speck upon the corner of the lens, when it was certain that the usefulness of these animals was in no way interfered with, and from appearances it was not probable it ever would.

Still the dealers saw the speck, and persisted in refusing to purchase. It is not so when they wish to sell—then these little things are of *no* moment. This disease also requires to be well looked into.

Your correspondent, Mr. Hawthorne, speaks of enlargement of the spermatic cord. Having had a good many cases of schirrous cord, I perhaps may be permitted to refer to them. When a case is brought to me for treatment I cast the animal, detach the integuments and membranes from the cord, and remove the cord as high up as I can, while an assistant holds back the scrotum. This I do with a knife: after which, I sear the blood-vessels. Up to the present time I have always succeeded in closing the scrotum, which is a proof, I think, that the cord must either have been absorbed or become so schirrous that no pus was formed by the vessels; and this being the case, the parts are to be considered as healthy or cured. I must conclude these imperfectly written remarks by earnestly calling upon the profession to take steps in such a direction as will afford us *isolated* veterinarians an opportunity of referring to some work upon the subject of soundness and unsoundness in horses; by which means we shall be in a position to satisfy our clients in matters of doubt and difficulty. One would imagine that in London it would be easy to collect together a number of gentlemen for the purpose of compiling or framing those laws we stand so much in need of. If the subject is taken up with spirit, I have no doubt ere long our desires will be satisfied.

PROPOSAL TO FORM A COMMITTEE FOR THE CONSIDERATION OF THE QUESTION OF SOUNDNESS AND UNSOUNDNESS.

By T. D. GREGORY, M.R.C.V.S., Bideford.

I AM delighted to see our friend Mr. Hawthorne has not allowed, nor does he with others intend to allow, the important subject of the warranty of horses and their unsoundness to remain in *statu quo*. It redounds much to his honour that, unlike many of our brethren who have retired from the active duties of professional life, he is not satisfied to enjoy the *Dolce far niente*. Mr. Hawthorne regrets that Mr. Dickens, myself, and other practical members of the veterinary profession, have not written more upon the sub-

ject of unsoundness. I may further add, there are very *few* practical subjects that are taken up and discussed as they should be. How seldom do we see the names of any of our eminent veterinary surgeons in your journal. How very little interest appears to be taken in the general welfare of the profession by those men whose duty it is to aid and assist in its advancement. How very chary they are in giving us the benefit of their opinions. I can assure Mr. Hawthorne that, as far as I am individually concerned, no subject connected with the veterinary profession has occupied more of my leisure thoughts than the present defective and unsatisfactory state of veterinary jurisprudence and the warranty of horses. As far back as the years 1849 and 1850, I endeavoured by my feeble efforts to arouse the profession to a sense of this. I was aided by the late much lamented Mr. Percival. We both failed, and for a time it has been *slumbering*; now I hope we shall be more successful. I presume no member of the veterinary profession will be bold enough to deny the advantage, if not the necessity, of doing something in this matter. I am perfectly aware of the difficulties we have to contend with, and the differences of opinion that exist with regard to it. Let us not be dispirited, but grapple with them as they arise; make an advance in the right direction, and we cannot fail to do the state some service. As any plan, if bad, is better than none, I will lay before you a rough outline of what I imagine would be a good one. But before doing this, I must inform Mr. Hawthorne, that upon one important point I differ from him; inasmuch as I think this is purely a professional matter, I would therefore let none but professional men have anything to do with it.

The plan I would propose should be such as this. In the first place let a committee be appointed, with a chairman, secretary, &c., in the usual way; to draw up a circular, containing a number of questions upon the subject of unsoundness, &c. Let copies be printed, and one sent to every member of the veterinary profession to be found in the published register, of five years' standing, requesting each to answer the several questions according to his opinion, and return it to the secretary; who, with the other members of the committee, shall then examine and decide each question by the majority. Also, let these opinions be published, and a copy be sent to and kept by each member of the profession, who will thus be prepared at all times to produce it when required, either in a court of justice or other place, and to show the opinions of the majority of veterinary surgeons upon

such subjects as may be at issue. Such opinions must be regarded with favour, and would be of great assistance to the veterinary witness. I will now just dot down a few questions to exemplify my meaning, viz. :

Do you consider corns to constitute unsoundness in an otherwise healthy foot, provided no lameness be present?

Do splints, or other bony deposits on the fore-legs, in your opinion, constitute unsoundness when no lameness is present?

Do you consider thorough-pins, wind-galls, or other bursal enlargements, not producing lameness or impeding action, to constitute unsoundness?

Do you believe a horse to be unsound, having a curb of long standing, when no lameness is present?

Is a horse unsound, in your opinion, having an opaque spot upon the cornea, when the internal structures of the eye are not involved?

This, then, is simply the outline of my plan. I do not wish to dictate or to consider that this is the best that can be adopted to meet the requirements of the case, I merely suggest this. I shall only be too happy to aid in a better one; and as funds will be necessary for carrying out any plan, I shall be delighted to contribute as far as it is required of me.

RUPTURE OF THE COLON CAUSED BY A CALCULUS.

By W. J. CHALLINER, M.R.C.V.S., Pendlebury, near Manchester.

ON Monday, July 27th, about one o'clock, p.m., an aged, thoroughbred mare was brought into our infirmary, suffering from severe abdominal pain, accompanied with rigors. On examination, I found the pulse to number fifty beats in the minute, and to be intermittent; the mouth dry and clammy; the visible mucous membranes injected; the extremities cold; the respiration increased, and a peculiar careworn, or anxious expression of countenance present, accompanied with frequent sighing. I administered a draught composed of—

Spt. Ether.-Nit.,
 Ether. Sulph.,
 Tinct. Opii, āā ʒj;
 Aloës, ʒiv;
 Aquæ tepidæ, q. s.

Stimulated the abdomen with a mustard embrocation; gave

an enema, and well clothed the body. In about half an hour she appeared to be somewhat easier; the abdominal pains being a little less violent, and she also began to perspire. About half past two o'clock, as the pain had not left her, and the pulse had now risen to sixty-five beats in the minute, I extracted about four quarts of blood. This did not appear to relieve her very much.

From the peculiar train of symptoms, I now concluded that I had lesion of some of the abdominal viscera to contend with. About four o'clock, I administered another draught, consisting of—

Ol. Lini, Oj;
Tinct. Opii, ℥j. M.

The animal did not at this time lay down very often, but when down was very still, having her legs drawn up to her body. Occasionally she looked back towards her flanks. When standing, the head drooped, and the sighing became much increased; while the expression of her countenance was such, that once seen it could never be forgotten.

$\frac{1}{4}$ to 5.—The pulse is very much increased in frequency, and stertorous breathing has commenced. I now no longer saw any hope. From this time until five o'clock, she stood still, when she suddenly fell down and expired.

Post-mortem examination.—On laying open the abdominal cavity my attention was attracted by the contents of the intestines floating about, which had caused extensive inflammation of the peritoneum. On examining the stomach I found it to be intact, and perfectly healthy. Proceeding along the intestines for some distance, I came to a rupture, about three or four inches in diameter, in the colon, just where it is about to make its second curve across the spine, or the termination of the double colon. Passing my fingers into the interior of the intestine they came in contact with some hard substance. Extending the opening, I took out a calculus, almost spherical in form, but having some very sharp points jutting out in places. These, in my opinion, from attrition, were the cause of rupture. On further examination, I found another calculus, not so large as the first, almost triangular in form. The calculi were worn quite smooth in places from rubbing one against the other. The weight of the one first removed was ten pounds; that of the second two pounds ten ounces. They appear to be of the triple phosphate kind. The animal had been noticed to be rather dull for some time previous to the attack, but she had not lost her appetite; indeed, she had eaten a feed of corn only an hour previous with her usual avidity.

PERICARDITIS IN CATTLE.

By W. WILLIAMS, M.V.C.E., Mold.

THE obscurity of the above affection in cattle, and the difficulty of its detection during life, on account of the symptoms in many instances being anything but decided, have induced me to forward the history of two cases that have fallen under my notice, trusting their publication will add to the list of symptoms indicative of this disease.

On the 16th of June, 1856, I was requested by Mr. Thomas Tatum, of Gwernafield, to attend a cow of his. Her history he gave as follows. She has been unwell since she calved three weeks ago. The foetal membranes were not expelled for a fortnight after the event, and they came away piecemeal in a state of putrescence. Her appetite has been very capricious all along, and her bowels rather costive. A discharge of white matter has taken place from the vagina for the last week or so. She gives but little milk. The breathing is tranquil, and she does not cough. She has a peculiar stare in the countenance, and takes a great deal of notice of everything. On inspection, I found her as the owner had stated; the symptoms, to a casual observer, being anything but indicative of extensive organic changes, but more of general debility after parturition. She was rather emaciated. On closer examination, I found the mucous membranes to be rather pallid; the mouth cool and moist; the temperature of the body but slightly below the natural standard, and equal over all parts of the body; the pulse very weak, beating 96 in the minute, and regular; the breathing only very slightly hurried. After advancing thus far in my examination, I must confess that the case fairly puzzled me, and I was inclined to look on it as one of general debility and leucorrhœa. But as the discharge from the vagina was only very slight, I thought it could not be the sole cause of the loss of appetite and other symptoms present. I now auscultated the chest, and on applying my ear, the respiratory murmur was heard distinct and natural, but I thought a little increased at the *anterior portion of both sides*. On auscultating the region of the heart, I failed to detect the sounds of that organ, and on still further examination, *both the sounds and impulse were undetectible*. This struck me as being curious, but on account of the regularity of the pulse I did not consider either the heart or its membranes to be the seat of disease, and treated the case as one of general debility,

loss of appetite, and leucorrhœa. The animal lingered for about four weeks more, the symptoms remaining nearly the same as when I first examined her, with the exception of increased emaciation.

The *post-mortem* revealed anæmia, the tissues being exceedingly pale and sodden, the blood in the vessels scanty and pale, and scarcely staining the fingers. The abdominal viscera were healthy, with the exception of the liver, which was congested. The gall-bladder was distended with dirty, lemon-coloured bile of thin consistence, and seemingly containing a large amount of mucus. On opening the cavity of the thorax, the pericardium was seen distended to an enormous extent, filling the floor of the cavity, and adherent to the sternum and pleura costalis by a thick layer of exuded lymph, this having no appearance of organization, but seemingly consisting of a shapeless basis-substance, easily separated from the parts it was in contact with. The cavity of the pericardium contained, at its inferior part, about two pints of a whey-like, fetid fluid. With the exception of that part which contained this fluid, the cavity was obliterated by exudation, matter about two inches in thickness surrounding and glueing together the visceral and parietal surfaces of the pericardium. The heart itself was flabby, pale, and its cavities contained a small amount of blood, of the same thin consistence as that in other parts of the body. The endocardium was healthy. The lungs presented no appearance of disease; they were pale, excepting in the parts lying undermost after death. The pleuræ, excepting where they were involved in the pericardiac disease, presented no abnormal appearance. The thoracic and abdominal cavities contained a little fluid.

Reflecting on the appearance presented by the pericardium, by its being adherent through the accompanying pleuritis to the walls of the thorax and sternum, and by the heart itself being thus in a manner bound down and fastened, by a thick layer of plastic and elastic material existing between it and the ribs, I was satisfied that the *absence of the sounds of impulse* was due to these pathological changes, and not, as I had foolishly supposed, to general debility. But before giving publicity to this opinion, I thought it better to wait for more proof.

September 4th, 1857. I was called to attend a cow, the property of W. Gregg, Esq., Syntroll, Mold. I had attended her in May previous, for "retention of the foetal membranes." She seemed to be very languid and depressed for some days before and after the removal of these; but as

she fed pretty well, I was not requested to prescribe for her. She had given milk freely all the summer, but had not appeared so lively as she ought to be. She seemed as well as usual on the evening of the 3d of September. On the morning of the 4th, her quantity of milk was diminished. On examination, I found her cold and wet from the rain of the previous night; standing "all of a heap;" head depressed and ears pendulous; mouth and nose cold; breathing tranquil; the bowels costive; pulse 100, very feeble but regular; the mucous membranes slightly tinged yellow. *Auscultation failed to detect the sounds of the heart, and the palpitation was absent.* I pronounced the case to be one of pericarditis, and that exudation had taken place to some extent; also that congestion of the liver existed; this being secondary, and owing to the feebleness of the circulation.

The treatment consisted in the administration of purgatives and stimulants. Counter-irritants were also applied to the sides, and as the case advanced, tonics were given. But nothing seemed to affect the pulse: it remained feeble throughout, and it was only a few days before death that irregularity was detected.

On Friday, Sept. 18th, diarrhœa set in; and on the 21st, œdematous swellings appeared in different parts of the body, but more especially on the dewlap and fore parts.

On the 23d, she dropped down and died without a struggle.

All throughout this animal exhibited the same watchful state as observed in Case 1, and the appetite was very capricious indeed. One day she would feed pretty well, then again she would not touch anything for days. The bowels were very irregular, and, on account of rumination being suspended, the food passed through her in a half masticated state.

The *post-mortem*, four hours after death, revealed general anæmia of the subcutaneous and muscular tissues, these being seemingly in a broken-down condition. The blood in the veins was pale and thin. The abomasum, small intestines, and liver, were congested; but even here the blood was of the same watery character as in other parts. The gall-bladder was distended with thin lemon-coloured bile. The thoracic cavity contained rather a large amount of clear serum. The pericardium was distended by a layer of lymph, about two inches in thickness, glueing together its two surfaces, and containing, near the apex of the heart, nearly a pint of dirty whey-coloured fluid, of a fetid odour. The lymph was easily removed from the heart, and between it and the muscular tissue of the organ, was a layer of cartila-

ginous substance about a quarter of an inch in thickness, covered by a serous glistening membrane. Towards the apex of the heart, this had formed bands of connexion between the two surfaces of the pericardium, but in all other parts it was confined to the visceral pericardium only. The lungs were slightly congested. The pleuræ were as described in the former case.

CYSTIC CALCULI IN A TERRIER.

By F. F. LONSDALE, V.S., Kingston-on-Thames.

ON the 21st of November, 1853, an Isle of Skye terrier-bitch, belonging to Mr. Oligilby, of Ham, was brought to me. The messenger stated that the animal had been unwell for a long time, but she continued to take food until very lately. She was, however, now so dull, that she did not care to move. On examination, I perceived that there was a peculiar anxiety about the countenance; the conjunctival membrane was slightly injected; the lining of the mouth of a pale pinky hue; the tongue clammy, but not hot; pain was evinced on pressure being applied over the loins and abdomen; the action of the heart was very feeble, and she was in an emaciated condition, which was not noticed by the owner, on account of the great length of the hair. There was also a disinclination to move, and she always rested on her sternum, with a slight elevation of her hinder parts. When made to move, she did not go above three or four yards before she endeavoured to void either her fæces or urine. At first, I thought it to be her fæces, but after watching her carefully, I found she was endeavouring to pass urine, and could not eject more than two or three tea-spoonfuls at a time. This she did very frequently. I at once suspected the existence of a calculus in the bladder. As very great irritation existed in that viscus, as well as from her debilitated condition, I felt convinced that an operation would prove fatal. I consequently communicated my views of the case to the owner, and advised her being destroyed, but he would not consent, saying—"Do the best you can for her."

The treatment I adopted consisted in emptying the rectum of its contents, and giving the compound castor-oil mixture, with oleaginous enemas, until the bowels responded. The

belly was frequently fomented by means of hot flannels wrung out of hot water, and she was kept warm and comfortable, for I saw that a soothing treatment to relieve the pain was all that could be done. She had given to her, three times a day, Sodæ Carb. Exsic. and an aromatic, made into a pill with soap; but all was of no use, as I anticipated. She died on the 2d of December.

Post-mortem examination.—On laying open the abdomen and thorax, every organ was found healthy, except the bladder. The walls of that viscus were very much thickened and contracted, and the two calculi I send to you were impacted in it. They nearly filled the entire cavity, it being impossible for more than a dessert-spoonful of urine to remain in the bladder at a time. I regret I did not make a wet preparation of it instead of a dry one. I have seen several cases of one calculus in the bladder, but never before met with two, both of them being so nearly of the same size and form.

[*Description and Analysis of the Calculi.*—In form, each was that of a triangular pyramid, the two being placed together at their bases. The weight of them was six drachms. In structure they were made up of layers, superposed on each other, the colour being nearly white, resembling hard chalk.

A fragment under the blowpipe first blackened, and then exhaled ammonia. On the flame being urged, it became whiter, and underwent fusion. A portion being pulverized, dissolved readily in dilute hydrochloric acid, in which the oxalate of ammonia produced a cloudiness. To the acid solution carbonate of soda added in excess caused an abundant amorphous precipitate to be thrown down. The inference from the above analysis is that, the concretions consist of the ammonia-magnesian, with phosphate of lime, or triple calculus, usually called *fusible calculus*.

We are much obliged to Mr. Lonsdale for this addition to our collection.]

A STRICT relation exists between the size of the blood corpuscles and the diameter of the pulmonary capillaries, and for this reason the transfusion of the blood of an animal into the veins of another of a different order is often fatal, from the corpuscles differing in dimensions.

Facts and Observations.

TREATMENT OF ENLARGED BURSÆ BY CAUSTICS.

Mr. J. PROWSE, M.R.C.S., Clifton, in a letter in the *Lancet*, states, that he has been in the habit of removing enlarged bursæ by means of lunar caustic applied in the form of the stick, moistened with a little water, and rubbed over the whole surface of the enlargement for the space of some minutes. In most cases, this treatment will be found effectual, where blisters, the tincture of iodine, &c., have been of little use, and it will obviate the necessity of passing setons through the tumour, or of removing it by means of dissection.

Is there anything suggestive in this?

TREATMENT OF OPEN-JOINT.

Mr. P. SMALE informs us, that his mode of treating open-joint, consists in first cleansing the wound, for the purpose of removing any extraneous matters that may be in it, then applying a paste, about the consistence of cream, made of pulverized aloes and a weak solution of the chloride of zinc. With this the cavity of the wound is filled, a dosset of tow laid on it, and over the whole a linen bandage, kept wet with cold water is placed. This is allowed to remain on for three or four days, the horse's head being tied up so as to prevent his lying down, or disturbing the dressings. If after that time, any escape of synovia takes place, the application of the paste is repeated; but in most cases, he says, he finds it to be stopped.

TREATMENT OF ENTERITIS.

Mr. C. PARNELL has forwarded to us for insertion, a case of enteritis in a horse; the successful treatment of which he, in a great measure, attributes to his having applied counter-irritants over the loins, as being nearer the large trunks of the blood-vessels, thus diverting the action of their ra-

mifications, instead of over the abdomen, the usual place chosen for these agents.

It was by no means a severe attack, and other instances will be required to confirm the advantage to be derived from this deviation from the ordinary mode of practice, which is one, in our opinion, not without its objections.

AMYLENE AS AN ANÆSTHETIC.

OUR readers will doubtless remember, that in a previous number of our journal (p. 307-8), we directed their attention to the above anæsthetic, and ventured to question its ever being employed for the lower animals. From the following, it would appear we were right in the view then taken by us:

“A few months ago amylene was recommended as preferable to ether and chloroform in producing stupefaction or anæsthesia, on the special ground that its employment was unattended with danger to the patient, or nearly so. MM. Foucher and Bonnet have, however, in a recent communication, addressed to the Academy of Sciences, recorded facts leading to quite a contrary result. In twelve experiments performed on rabbits, they have ascertained that the anæsthetic effect of amylene is produced within three and six minutes after its application. Before stupefaction is produced, the animal utters piercing cries and throws its head backwards; its breathing is accelerated, the globe of the eye is strongly injected and moves convulsively: a tracheal hoarseness always accompanying the above symptoms. The period of insensibility does not last long if the application of amylene be not continued; in the contrary case, however, a complete collapse takes place; the animal, stretched out without motion, obeys every impulse of the hand, and resembles a flabby mass, in which breathing is hardly perceptible. This state may last twenty minutes without causing death. The blood drawn from the arteries during this period still preserves its usual colour. Animals subjected to the action of amylene for a certain length of time continue after the operation in a state of stupor and imbecility, which sometimes lasts seven or eight hours; but in none of the cases observed by the authors of the communication has death followed the application of amylene. The conclusions resulting from their experiments are as follow:—1. Sulphuric ether, chloroform, and amylene, are, of all volatile

substances experimented on, the only ones that produce anæsthesia. 2. Amylene does not produce stupefaction, unless the quantity of air with which it is diluted be very small; but then it acts upon the animal economy, and especially upon the respiratory organs, in a manner which may produce dangerous effects. 3. Chloroform has all the advantages of amylene, without the evils which accompany the use of the latter. 4. None of the substances above-mentioned produce anæsthesia, whether local or general, when applied to any peculiar part of the body by injection under the skin."

A SINGULAR CONCRETION FOUND IN THE ILEUM OF A COW.

Mr. BOVETT, a few days since, placed in our hands a mass, which at first sight very much resembled fragments of a snake that had become petrified. This opinion was shared in by others in common with ourselves. He, however, informed us that it was taken by his father from the ileum of a cow, just as this gut makes its last curvature, and was lodged in a sac that it had formed for itself. Upon examination, it was found to be coated with the phosphates. Its size was about that of the fist. A portion having the soluble salts removed from it by means of an acid, the remaining fibrous matter, under the microscope, showed it to be made up of wool. The conjecture, therefore, is that it is part of a stocking which the animal had swallowed, and by retention it had become covered with the earthy salts above named.

NON-SUSCEPTIBILITY OF THE HEDGEHOG TO THE INFLUENCE OF POISONS.

SCARCELY any poison will act on the hedgehog. Pallas gave to one a hundred cantharides, which he seemed to relish very much, and suffered no inconvenience whatever from them. Lassy caused one to be bitten by a viper several times, without any effect following. And Mr. Cuthbert Johnson states that prussic acid, arsenic, opium, and corrosive sublimate, have each been given to this animal, without producing the slightest action upon him.

Extracts from British and Foreign Journals.

ON THE INFLUENCE OF CHOLERA ON THE LOWER ANIMALS.

By W. LAUDER LINDSAY, M.D., Perth.

(*Read before the Epidemiological Society, London, June 2, 1856.*)

No one at all conversant with the literature of cholera in this country can fail to have observed, that an immense amount of labour has been expended in investigating the natural history of the disease, since its first invasion in 1832, without adequate results. If we place in one scale of the balance, the thousands of volumes, pamphlets, and papers that have been written, and in the other, the actual amount of knowledge which we at present possess, the result cannot be but most unsatisfactory—most humiliating. The causes of this have been manifold, but to only two of them need I here allude. The attention of observers appears to have been too much concentrated on particular points in the natural history of cholera—for instance, on its empiric treatment; and, as a consequence, certain parts of a research may be said to have been trodden bare, while others have been comparatively unexplored. Of the latter, one of the most important, undoubtedly, is the influence of the cholera poison on plants and the lower animals, whether communicated naturally or artificially. Again, there has been too frequently evinced a premature anxiety to attain general results, to deduce general laws or principles, to jump at general conclusions. This tendency is too often fatal to the interests of true science; it leads us to ignore, distort, or misinterpret *facts*. The results of investigations entered upon in this spirit have always proved the full force and truth of the trite sayings, that “facts are stubborn things,” for they can neither with impunity be ignored or distorted; and that there are “more false facts than false theories in medicine.” It seldom happens—nay, it is scarcely reasonable to expect—that the same mind is equally fitted, on the one hand, accurately to observe, and laboriously to accumulate facts; and on the other, to sift, arrange, and reason upon these, so as to deduce general principles. No; he who gathers the harvest of facts into the storehouses of knowledge is the type of one class of naturalists—the careful, plodding, unostentatious observer—

he may be said to be actuated by a spirit of acquisitiveness ; while he who subjects the grain thus accumulated to the machinery of mental and scientific analysis—who separates the wheat from the chaff—who, from a chaos of apparently unconnected data, evolves harmonious laws, and exhibits their mutual relations and significations—is the type of an opposite class, whose labours are guided by the spirit of inductive philosophy. So far as regards the investigation of the natural history of cholera, I fear we must meanwhile be content to belong to the first class above enumerated—the class of observers, and gather into our public journals and learned societies a mass of simple facts, bearing on various points, which as yet are very obscure, or have not been properly elucidated. For, with Dr. Gull, I believe firmly that, “for the present, such generalizations are of little value, and that we arrest inquiry by their adoption.” Let us take a somewhat parallel example. Look at the science of meteorology, now comparatively so perfect ; or let us consider, in particular, the laws of the winds and waves—of marine and aerial currents. On how many thousands of observations, noted in every part of the habitable globe for a long series of years, is our interpretation of these laws founded ? The logs of the world’s navies contain the facts simply noted by myriads of observers, who had no fore-shadows of the important general principles which they were contributing, in however great or small a degree, to evolve or deduce—observers comparatively uneducated, and who had little idea of the possible practical applications of science to their own art—the art of navigation. But from piles of apparently worthless log-books, a Maury is able to deduce the most beautiful general laws, to interpret nature with the highest practical benefits. In the investigation of such a subject as that of cholera, we cannot each one expect to be a Maury, to be the means of solving the Gordian problem of the essential nature and cause of cholera ; but every observer may add a fact, or many facts, to the general fund of positive knowledge, and until such a fund is vast and valuable, a Maury’s labours are useless and out of place.

I have spoken of the voluminous nature of the literature of cholera in this country, and of the undue attention devoted to particular branches of its natural history, with the entire neglect of others. The record of illustrations of the influence of the cholera poison on plants and the lower animals, is extremely meagre and unsatisfactory. This subject appears to me to have a most important bearing on the advancement of our knowledge of cholera in man : and a con-

viction of the fertile and valuable results which this field of inquiry promises, leads me to urge the aid and co-operation of the profession in promoting one of the main objects of the "Journal of Public Health," viz.: to trace out "the connection between certain unhealthy conditions of the human family, and unhealthy conditions in inferior animals and plants." An earnest desire that this object should be faithfully carried out, suggests the propriety of shortly indicating the kind of facts which it is advisable to collect, as well as for the satisfaction of such as apply the *cui bono* test to every such inquiry, the kind of generalizations to which the classification of these facts is likely to lead. It would occupy too much space were I to do more here than merely skeletonize the subject. The heads of the inquiry will, however, suggest many of the details, for which I beg to refer to papers already published in other medical journals.*

Never was the light of science so fully brought to bear on the investigation of disease; never was the profession so fully equipped for such an inquiry; never was the practitioner so ready, as well as able, to put his shoulder to the wheel, and do the trench-work of the assault; never was there a higher degree of cultivation of the observative faculties, than at the present moment. Let us, then, no longer tread the beaten, and now barren, paths of our predecessors; let us enter upon a fresh subject of inquiry—a more promising, and comparatively unexplored field. Now is obviously the proper time to prepare ourselves for the investigation—to consider the subject in all its bearings. Let us not be lulled into apathy by present immunity; let us not be found unprepared and in confusion when the epidemic again breaks forth. This would be but repeating the fatal errors of our predecessors. Only last spring, there were sporadic cases of cholera in different parts of Britain; and, during the past year, it has not only been constant in the Crimean army, but has ravaged many parts of Southern Europe. The germs of the pestilence are evidently floating over Europe, and they only require a suitable nidus to take root and fructify. "Let us then be up and doing," with "Semper paratus" for our motto, that, burst forth when it may, we shall be ready to grapple more successfully with the destroyer—to attack him with more powerful weapons than heretofore.

The inquiry branches out into so many different depart-

* 'Association Medical Journal,' Dec. 15, and Sept. 15, 1854. 'Gaz. hebdomadaire de Méd. et de Chir.,' Nov. 24, 1854. 'Edinburgh Medical and Surgical Journal,' April and Oct., 1854.

ments, that it is obviously impossible for individual practitioners, who have at their disposal only a limited amount of time and opportunities, to make and record observations or experiments on all the topics which I am about to mention. But it is in the power of the provincial practitioners of Britain to be of great service, not perhaps so much by personally observing facts, as by recording those observed by others. They might do a great good, at a trifling expense of time or trouble, by directing to this subject the attention of non-professional persons, whose duties or tastes lead them constantly to observe the habits and diseases of the lower animals, especially such as are domesticated, and by recording the results of their experiences, whether positive or negative. To indicate the kinds or classes of persons to whom I here allude, I need merely mention dog-breakers, cattle-breeders, sheep-dealers, graziers, farmers, grooms, poultrymen, and the like. Such a record, like a register of meteorological observations, though apparently uninteresting or unimportant in detail, could not fail to prove of the utmost value in the aggregate, whatever the nature of the general results or conclusions to which it pointed. For it must ever be borne in mind, that negative facts in science are often of equal importance with those which are positive—a knowledge of what is not, frequently most materially assisting us in arriving at a knowledge of what is. Let not an observer or recorder be prevented from giving publicity to a single fact on account of its apparent insignificance; in an investigation of such a nature, every well ascertained fact has its positive and relative value. While some facts are of such a kind that they may be, with propriety and safety, observed by non-professional, and even by totally uneducated persons, and may be accepted without further evidence than the testimony of an informant, others must be tested by experiment, and not a few ought to be sifted by scientific experts, acquainted with the details of modern histology, chemistry, and pathology, and conversant with all the bearings of the subject. I would suggest that particular points be selected for investigation, according to the opportunities or inclinations of individual members of associations or societies, whose researches might converge towards a common aim. Our medical societies, especially such as devote attention to the natural history of epidemics, might do much service to science by taking up this inquiry officially. Such a mode of following out the subject, is most likely to be followed by beneficial results.

(To be continued.)

ON THE DIGESTIBILITY OF IODIDE OF STARCH.

By Dr. JUTTE.

MANY physicians, when prescribing preparations of iodine, forbid the use of amylaceous food; acting upon the theory, that, from the great affinity of iodine to starch, the iodide of starch must be formed, which, as such, would pass from the body *undissolved*, whereby the action of the medicine would be weakened or wholly destroyed. The iodide of starch is, however, of so unstable a composition that it is easily decomposed, even by the saliva; the iodine entering again into soluble *absorbable* combinations, can be again recognised in the urine. In order to prove this, the author gave frequently the iodide of starch. It was prepared in the following manner:—One ounce of wet starch was rubbed up with two drachms of tincture of iodine, and the mass dried. Of this powder there were taken, three times daily, ten grains, corresponding to one quarter of a grain of iodine at a dose. The examination of the urine was conducted in the following manner:—The urine was mixed with some pulverized starch in a small proof glass, then a sufficient quantity of chlorine water was added; the previous white fluid became more or less violet-coloured from the presence of the iodine; or a large quantity of urine was evaporated to one-tenth of its volume, then a few drops of sulphuric acid added, and immediately a paper spread with starch paste held over it. In every case, when the iodide of starch has been taken, the author succeeded in detecting the presence of iodine in the urine. Sometimes it was difficult, immediately after the first dose of the iodide, to detect the iodine, there being but a slight reaction, on account of the insufficient sensibility of the reagent, which, however, becomes evident when several doses are given. In such cases, one can use the chloride of palladium, which is extremely sensitive, and leaves no doubt of the final passage of the iodine in the urine. It seems, therefore, unnecessary to deny the use of amylaceous food to patients while taking iodine.—*Chemist*.

[Were not the iodide of starch, to some extent at least, soluble in the fluids and juices of the stomach and intestines, we should be inclined to more than doubt the efficacy of many of the compounds of iodine to those of our patients, the basis of whose food consists of amylaceous matters, as oats, &c.]

A METHOD OF DETERMINING THE AMOUNT OF SUGAR IN DIABETIC URINE.

By Dr. GARROD.

AT a recent meeting of the "Medical Society of London," Dr. Garrod brought before the members a plan he had discovered to accomplish the above object. At the same time he exhibited a small instrument named a *Glucometer*. It is constructed upon the fact, that glucose or diabetic sugar, when boiled with a solution of carbonate of potash, gives rise to an amber colour, and that the tint is in proportion to the quantity of sugar. The apparatus consists of a standard, a graduated tube of the same calibre as the standard, and an accurately divided minim measure, the standard being filled with a solution of the exact tint produced by a known quantity (half a grain) of the diabetic sugar to the fluid ounce. The following is the method of using the glucometer:—A small quantity of the urine, say half a fluid drachm, either previously diluted or not, according to circumstances readily ascertained, is to be accurately measured in the small minim tube, and mixed with the same bulk of a solution of carbonate of potash of a given strength, and after the measure has been washed out with a drachm or two of distilled water, the whole is to be kept at the boiling point over a spirit-lamp for five minutes, either in a large test-tube, or, still better, a very small flask. After cooling, the coloured liquor should be transferred to the large tube, and distilled water added until the tint exactly corresponds to that of the standard—a process which may be readily effected by holding the tubes side by side, directing them to a moderately bright light. All the required data for determining the amount of sugar are now obtained. Suppose, for example, that the half drachm of urine employed in the quantitative analysis requires to be diluted so as to occupy six and a half drachms before the standard tint is obtained, such urine would contain six grains and a half of sugar per ounce; for its bulk has been increased thirteen times, and therefore thirteen half grains, or six grains and a half, of sugar must be present. Again, suppose the urine had been diluted with three times its bulk of water before being employed in the glucometer, which when the urine is rich in sugar may be necessary, in order to prevent the graduated tube being of inconvenient length, then it is only required to multiply the amount of sugar by four to obtain the total quantity in the

original urine. In the above-named experiment it would therefore be twenty-six grains in each fluid ounce. Dr. Garrod alluded to various methods which had from time to time been employed for the purpose of ascertaining the amount of sugar in the urine in cases of diabetes; showed the difficulties which most or all of them presented, especially to the medical practitioner, which was practically proved by their non-employment, and expressed a hope that by means of the glucometer the clinical determination of sugar might become a matter of little difficulty, and capable of being effected by any one engaged in the practice of medicine; and he also considered that such determinations might prove of great value, not only in ascertaining the amount of disease under which any diabetic subject might be suffering, but also the value of various articles of diet and of different remedies in the treatment of this most important disease.

PARLIAMENTARY INTELLIGENCE.

EXTRACTS FROM MINUTES OF EVIDENCE OF THE "SELECT COMMITTEE ON THE SHEEP, &c., CONTAGIOUS DISEASES PREVENTION BILL."

(Examination of Mr. J. B. Simonds continued from p. 587.)

107. Have those precautions prevented the disease?—It is believed by them that pleuro-pneumonia has frequently been exterminated by the adoption of those severe measures.

108. *Mr. Miles.*—Is any sum paid for the animals so slaughtered?—Yes; which sum is put on them by a jury impaneled previous to the slaughtering of the animals.

109. *Lord Naas.*—Is that paid for by government?—Yes, as a rule; sometimes by insurance societies.

110. Do you think that our Chancellor of the Exchequer would sanction that?—No.

111. Now, take an animal in one of those foreign countries that you have alluded to, that has only been suspected to be diseased, and which would likewise be subjected to be slaughtered; what deterioration of price would there be between that animal and a perfectly sound animal?—The animals are examined after they are slaughtered, and if they are found to be in a state of health, they are allowed to be sent at once into the market, and to be disposed of, consequently there is very little loss indeed sustained on such as

them. On animals that are not fat, the estimated value is paid, which is thought to be a perfect equivalent.

112. Even as a sound animal?—As a sound animal.

113. *Chairman*.—I want to ask a few more questions as to this disease. I think in the early part of your evidence you stated it was your opinion that pleuro-pneumonia was an epidemic, and also contagious and infectious; and what you have since told us evidently proves it is your opinion that it is spread by contagion; am I right in so understanding what you have stated?—Quite right.

114. Then you stated there would be great difficulty in establishing a quarantine with a view to prevent the importation of this disorder from abroad?—There would be a great difficulty in establishing a quarantine with reference to contagious diseases; I was not then speaking exclusively with regard to pleuro-pneumonia.

115. But, with reference to these disorders generally, and more especially with reference to the disorder called pleuro-pneumonia, you are of opinion it has been introduced and spread in this country through the means of foreign cattle?—I am of opinion that the disease, pleuro-pneumonia, has been augmented in this country by the introduction of animals labouring under the affection from abroad; it did not, however, originally show itself in England, in consequence of animals coming from abroad suffering with it, but it appeared here, in fact, in the form of an epidemic.

116. But the extent of the disorder in this country is increased by the importation of cattle, in certain cases, suffering under the disorder?—That is my decided opinion.

117. And you would adopt precautionary measures in England tantamount to a quarantine, but you see the difficulties of establishing the same system of quarantine as to foreign cattle?—Yes.

118. But if those arrangements could be adopted, it would tend to the diminution of the disease prevalent in this country?—Certainly.

119. *Lord Naas*.—Is it accepted as a truth by all veterinary surgeons that pleuro-pneumonia is contagious in all cases?—I do not think it is.

120. Is there not a great difference of opinion among persons who have practically examined this matter?—There is a difference of opinion on this, as there is a difference of opinion with regard to any other disease, whether it is contagious or not. It is well known that some men are great contagionists, and others not.

121. In your examination of this question, have not some

very curious facts presented themselves to you as to the outbreak of this disease, which would shake your opinion very much as to its being contagious?—I believe it frequently extends (as I have before explained to the Committee), from the ordinary causes which produced it at first; that is to say, it comes as an epidemic affection, breaks out in that form, and spreads; but I further believe that it not unfrequently extends itself from one part of the country to another, and among a herd of cattle also from the ordinary influence of contagion.

122. Take a large building, in which cattle are placed for stall feeding; you find cases in different parts of that building, and you find that a beast standing next to the beast affected may be the last affected?—We frequently meet with instances of that description, but that does not militate against the opinion of the disease being contagious. A disease may be contagious, and remarkably so, but all animals are not equally susceptible of taking the contagion at the particular time of their first exposure. For example, two individuals may pass into the Small Pox Hospital, both of them unprotected by vaccination, one shall take the disease immediately, the other shall resist it entirely; and that which is a fact with regard to the spread of disease in man, is a fact with regard to the spread of similar disorders in the lower animals.

123. You would not say that pleuro-pneumonia was contagious in the same degree that you would say glanders was?—I think pleuro-pneumonia is equally contagious with glanders.

124. Do you think that in the case which I have alluded to, of a horse standing next to another horse affected by glanders, sharing the same food every day, feeding out of the same trough, the disease would be more likely to be communicated in the case of glanders than in the case of pleuro-pneumonia?—Glanders, I believe, to be a disease not strictly infectious, but contagious; pleuro-pneumonia I believe to be infectious, that is to say, exhalations arising from the diseased animal's body become disseminated through an apartment where a certain number of animals are placed, and some of the animals susceptible take it; but as to glanders, a glandered horse might be placed at one corner of a stable, and if kept apart from other horses in that stable, the exhalations arising from his body would not disseminate the disease. Glanders is not an infectious disease, but a contagious one. The matter that flows from the nostrils coming in contact with the nostrils of another horse would

affect him. The *materies morbi* have first a local effect, and then the system becomes ultimately contaminated.

125. Do you think that regulations such as you have alluded to are more calculated to stop the spread of contagious diseases than of infectious diseases?—Unquestionably.

126. And regulations that might be necessary and very efficient in the case of glanders, and such-like diseases, would not be so necessary with regard to pleuro-pneumonia and other diseases simply infectious?—Just so; but I think it would be easy so to word a clause as to meet these differences.

127. *Mr. Miles.*—At what stage of the disease do you think pleuro-pneumonia becomes infectious?—I think as soon as it declares itself, as soon as it can be satisfactorily ascertained that the animal has the disease. This agrees with every other contagious disease affecting animals. Such diseases as are incubated in the system of an animal, the animal has no power of extending during the period of incubation; but as soon as the disease declares itself, then it takes on either its contagious or infectious property, or both.

128. Supposing you had twenty animals tied up, and one is affected merely by what is called the incipient state, that animal is taken away, and slaughtered; but if it has been with other animals for two or three days, would the other animals be infected by the presence of that animal for those two or three days?—Not necessarily so; the probability is, that all would escape. It is just possible that one or two might take the disease; that would depend entirely on the degree of susceptibility that existed among the animals at the time they were living with the diseased.

129. Your opinion is, that from the very first moment the disease attacks the animal, it is contagious?—I believe it is so.

130. I will now take you to the other disease, the sheep-pox. Will you describe the symptoms, and say whether you conceive it infectious or contagious?—Small-pox, as a disease attacking animals, seems exclusively to belong to sheep. It is an affection which is highly contagious, and also infectious; it is incubated in the system of an animal for a period of time varying from seven to twelve days, during which the animal gives not the slightest evidence of being affected with any malady: when the disease shows itself, the animal has some constitutional disturbance, which leads to an alteration of the character of the pulse, and it is also accompanied with loss of appetite and of rumination; but the principal changes show themselves upon the skin. We find, in the first instance, there is efflorescence, a redness of the skin in certain places, more particularly where it is void of wool.

This general redness is in a few hours followed by the formation of what are technically called papulæ. These papulæ pass on gradually into a stage in which vesicles are produced on them, and these vesicles contain the *materies morbi* of the disease. Nature has purified, as it were, the system by the formation of these vesicles, and the consequence is, that, by taking the contents of them, we can propagate the disease from one animal to another, as we do in the ordinary process of inoculation. Subsequently to the formation of the vesicles, ulcers will be found upon the skin. These ulcers will extend more or less deeply into the skin, and the animal frequently dies in the ulcerative stage of the disease; but it is more likely to die in the papular stage, from the circumstance that no purification of its system has as yet taken place. The disease becomes contagious as soon as the papulæ show themselves. It is difficult to say when it ceases to be contagious, and consequently I consider there should be in a Bill to prevent the spread of contagious diseases a regulation that no animal should either be sold by auction, or sent to a fair or market within four weeks from the time of the occurrence of the last case, because I believe that about the wool of these animals the infection will hang, and that they can thus propagate the disease through the country.

131. Was this disease imported from a foreign country? —It was imported into this country in 1847.

132. Has it been prevalent since?—It was very prevalent for three or four years; it subsequently ceased, and I believe at the present time we have no case of small-pox in the country.

133. To what do you attribute that?—I attribute it in part to the inspection of animals at the Customs; in part to the non-occurrence of the disease on the continent; in part to our own legislation on the subject; and in part also to the fact that the foreign sheep sent into the country are usually slaughtered within a few days of their being brought to market. When the system existed for the purchase of these sheep by farmers as store sheep, then there was a much greater risk run of the outbreak of the infection; but it is known that for the last ten or twelve years no part of the continent of Europe from which we have had sheep has been infected with small-pox. It was generally found that these foreign sheep did not pay sufficiently well for their keep in this country, and consequently they are now sold to the butchers when they come in; then we have had in operation the Act which practically has isolated these sheep from healthy ones.

(To be continued.)

THE VETERINARIAN, NOVEMBER 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

OPENING OF THE SCHOLASTIC SESSION 1857-58,

AT THE

ROYAL VETERINARY COLLEGE, LONDON.

The scholastic session of the Royal Veterinary College opened on Monday, the 5th ult., a fortnight before the ordinary time of later years, and more than a month before what was wont to be the case in days gone by. Thus it is evident that at *Alma Mater* there is no manifestation of either senility or decay; but contrariwise, of activity and praiseworthy energy. The entrance-fees for the instruction given there, has also been raised. This we do not regret; rather we would say, we rejoice to know it is so, since the result will be a higher *tone* given to the education of the student of veterinary medicine, and this will almost of itself necessitate an extension of his curriculum of study; while a still better educated class of young men than even now exists, will be induced to enter the profession, by which it cannot fail to be in the end advantaged.

The introductory address was delivered by Professor Morton to an audience far exceeding the usual number. It was extremely pleasing to see so many of the older members of the profession present, several of whom were accompanied by their sons; and we can conceive, in some measure, what their feelings must have been on looking back thirty or forty years, to the time when they first entered on their studies. Since then they had mingled with the world and encountered its smiles and its frowns. They had done battle with its difficulties, and had overcome them; although, perhaps, they may not have escaped altogether unscathed. It was also gratifying to hear those who remembered the Institution in

its infancy express their approval of the changes that had taken place in it, both as it regards the facilities for study, and the increased means afforded to the student for acquiring information.

Concurring, as we do, with the *tenor* of the lecture, we see cogent reasons why the curriculum of the veterinary student should be extended. There are many divisions of natural philosophy that bear on his studies; and these are now taught both in agricultural colleges and military schools, and with those there educated he is brought into contact; with them he has in after life to do. Besides this, he is without the assistance afforded to the practitioner of human medicine; his patients not possessing the power of speech. It may, on the other hand, be said, "They never deceive: by symptoms the true nature of the malady under which an animal is laboring may be always ascertained." But these are sometimes very obscure; and hence the necessity of an intimate acquaintance with the means of detection; hence, too, the value of practical experience, which can only result from time. Sound principles being inculcated, the observant and attentive student will soon be able to form a true diagnosis of disease, his familiarity with the function of parts when in health enabling him to detect any deviation, and his acquaintance with therapeutics directing him to the employment of the proper remedies to correct this. It is thus that the necessity of a scientific education is shown; and living, if not in an age of discovery, at least in a testing age of abilities to apply principles, it is absolutely necessary that all the required aids should be afforded the aspirant, so that he may acquire knowledge.

The veterinary profession stands now in a very different position to what it did only a few years since. Its graduates are in greater requisition by the public, who have seen the ignorance and cruelty of the old farriers' art supplanted by science; the resources of which have been made available both for the eradication of disease and its prevention. Nor has this fact been lost sight of by the governors of the Royal Veterinary College, who have from time to time ap-

pointed teachers in other divisions than those once thought necessary to be taught within the walls of their institution. This is well : still, as it must be conceded that this is a day of mind-progress, so is it demanded they do not stop here, but timely anticipate the growing wants of the profession, and thus enable it to maintain its standing among the other divisions of science. From what has already been done we have just grounds for feeling convinced that this will be the case, and we are contented to wait in hope.

Of course, thus assisted, the student will be called upon for increased labour on his part, and probably for an increase of time, so as to enable him to become acquainted with the different subjects taught. This will doubtless prove another advantage to the profession.

It has been thought by some persons that the present required period is too restricted ; and under certain circumstances we are disposed to think it is ; but should any additions be made, then there can be no doubt it will be. The increased expense connected with this augmentation of studies and time, we are careless about entering into the consideration of, being assured of this, that money cannot be better expended than in the acquirement of knowledge ; nor are objections ever raised if so be an adequate return is shown for the outlay.

The object of science is the discovery of those things by which mankind will be benefited, and although that which is found out to-day may appear to be of little worth, yet its application may afterwards prove of incalculable good. We could elucidate this position by a reference to the recent obtainment of some of the metals, the preparation of colloid from gun-cotton, the separation of the sweet principle, glycerine, from fat, and others, but we are compelled to refrain.

We are moreover of opinion, that the time of probation for the profession has continued sufficiently long, and that now its members should assume their proper position in society. As a body are they able to do this ? If not, is the fault with the individual members, or with those to whom

the educational part belongs? The question may prove a home-thrust, but it is one that should be fairly met. The study of medicine may be said to be life-long, and never completely attained, since it involves so much thought and reflection, and an intimacy with so many of the physical sciences. By the study of these, "not only is the mind exercised in the careful collection and arrangement of numerous facts which bear some mutual relation to each other, and enabled to appreciate their relative importance in its attempts to reduce them all to the simplest expression, but it is taught to search after and to grasp the most minute and delicate changes, without losing sight of or undervaluing those general and common-place observations which present themselves to the uneducated."

We are not of opinion that Mr. Morton exhausted his subject in the additions proposed by him. An acquaintance with the laws of *hygiene*, involving as they do some knowledge of geology, meteorology and electricity, is required by the practitioner of veterinary medicine. Then there is the regulation of food, or *dietetics*, both in health and disease. Nor should he be ignorant of the conditional state of the atmosphere resulting from a want of drainage, or of ventilation; these being all external agents, so to speak, operating on the organism, and inducing in it certain changes favourable or otherwise. Perhaps, too, natural history, so far as it is necessary, and the elements of natural philosophy, should be taught in our schools; although, probably, the time is not yet come for the introduction of these; but come it will if we are to continue to progress.

In addition to all this, it may hereafter be desirable to introduce the collegiate system into *Alma Mater*; the students *generally* living within the institution, so that the "Rules and Regulations" devised for their benefit may be enforced, and a regular and systematic education carried out. As it is at present, with many, much loss of time is sustained, not to say anything of the absense of all control, and the evil that arises from the allurements and temptations to which they are exposed. One thing more. We would have the examinations

for a diploma more practical in their nature. The candidate should give proof of his capability of performing all the ordinary operations, both on the horse and other animals. He should also publicly examine a horse as to soundness, and point out the good and bad points of the animal. The application of tests or reagents for poisons, &c., should likewise be demonstrated by him, and the manner of conducting an analysis; whilst the history and effects of the articles of the *Materia Medica* should be given, the different substances being placed before him. All this would necessitate the holding of the examinations at the college, under the direction of the respective professors. And why not? Can there be a more fitting or convenient place? It is so in the continental schools, and why not in England? *Only let it be remembered, the teachers are not to be the judges of the merits of the candidates.* Let this be done, and we think there remains but little if anything to be desired.

VETERINARY MEDICAL ASSOCIATION.

SECRETARY'S REPORT FOR THE TWENTY-FIRST SESSION, 1856-7.

MR. PRESIDENT AND GENTLEMEN,—At the close of each session it has been the duty of the acting secretary of the Veterinary Medical Association to present to its members a report of the proceedings during the session. In obedience with that custom, I now venture upon the pleasing task of bringing before you, in as concise a manner as the nature of the subject will admit, a review of what has been done during the session.

It was for the more especial benefit of the student that this association was established, and I cannot refrain from expressing a hope that the seeds of knowledge so profusely scattered during the session now nearly passed, may have fallen upon such genial soil as will hereafter bring forth fruit, "some forty, some sixty, and some an hundred fold."

The present session has not been less productive of subjects for the exercise of the minds and talents of the students than any of its predecessors, and I trust the advantages they have derived from the discussions will clearly show that we are at least progressing; and that whilst other institutions

are making such rapid strides in the development of the arts and sciences, the emulation of the members of this association has been awakened, so that this may be placed on an equality with other kindred institutions. It is gratifying to record that the utmost cordiality and good feeling have always prevailed during the meetings. But that which may be said to characterise the present session is its having attained its majority; this being the twenty-first year of its existence. That it may long continue to promote the objects for which it was formed, and to aid in the advancement of the profession, is, I am sure, the sincere wish of every member present. After this brief preface, I proceed to notice the number and nature of the contributions it has received, whether in the form of essays, cases, or morbid, and botanical specimens.

The essays introduced have been more numerous than usual. The variety and importance of the subjects chosen by their respective authors were highly creditable to them. The debates they elicited have also been very interesting and instructive.

The morbid or pathological specimens at different times laid on the table, have drawn forth opinions from the members relative to their nature and causes, which, although it cannot be said that they always led to definite and correct conclusions, must nevertheless have been productive of much good, since in themselves highly instructive, they inculcated a desire to trace effects up to their causes.

The sciences of chemistry and materia medica have been frequently and very beneficially adverted to during the various discussions.

The attention of the members has also been from time to time directed to the great benefits arising from a knowledge of botany, by the introduction of various specimens of poisonous roots which are occasionally given to some of our domesticated animals, either by accident or design, and which are not unfrequently attended with serious results. It is confidently hoped that the study of this science will, ere long, form a part of the education of the veterinary student.

The members held their first meeting for the session in the theatre of the college on the evening of October 21st, 1856, when the following were elected as vice-presidents from among the students, viz.: Messrs. J. Carter, J. Ferris, C. Dayus, H. Flower, I. Wattam, and J. T. Lupton; and, as acting secretary, Mr. W. C. Branford.

The library has received several additions by donations and purchase, and the works have continued to be freely

circulated. In accordance with the resolution of the Council a catalogue of the library, together with the rules and regulations, and list of the members of the association, has been printed and distributed amongst the members.

The following is a list of the contributions, arranged according to their nature and date of introduction.

ESSAYS.

<i>Date.</i>	<i>Author's Name.</i>	<i>Subject.</i>
1856.		
Nov. 4.	Mr. J. Field . .	Prize Essay.
" 10.	— J. Ferris . .	Diseases of the Joints.
" 25.	— H. Flower . .	Pleurisy as affecting the Horse.
Dec. 2.	— W. A. Cox . .	Pneumonia in the Horse and Ox.
" 9.	— C. Dayus . .	The Anatomy, Physiology, and Principal Diseases of the Horse's Eye.
1857.		
Jan. 6.	— G. A. Drewe . .	The Teeth of the Horse.
" 20.	— D. Wyer . .	Glanders and Farcy.
Feb. 3.	— J. Wattam . .	Diseases as affecting the Foot of the Horse.
" 17.	— J. I. Lupton . .	The Anatomy of the Stomach, Liver, and Pancreas of the Horse.
" 24.	— W. Burt . .	Roaring and Broken Wind.
March 3.	— A. E. Clarke . .	Debility the Cause of Disease.
" 10.	— H. Cutting . .	Anatomy and Physiology of the Tissues.
" 17.	— W. C. Branford . .	The Anatomy and Pathology of the Urinary Organs of the Horse.
" 31.	— F. J. B. Jones . .	The various Forms of Hernia in the Horse.

PATHOLOGICAL CONTRIBUTIONS, WITH THEIR HISTORY.

1856.		
Dec. 2.	Mr. W. C. Branford .	The Lungs of an Ox which had been affected with Pleuro-pneumonia.
" 9.	— W. D. Lines . .	Ruptured single Colon of a Horse, with a Calculus taken from the same Animal.
1857.		
Feb. 10.	— W. C. Branford .	The Brain of a Dog subject to Epilepsy. Post-mortem examination shewed considerable effusion of sero-sanguineous fluid into the left lateral ventricle.
March 10.	— W. C. Branford .	Diseased Semilunar Valves in the Heart of a Cow.
	Idem . .	A portion of Emphysematous Intestine of a Pig.
" 24.	— — Jones . .	Impervious Fallopiian Tubes of a Heifer.
	Idem . .	Ossific Deposits on the Bones of the Pastern Joint of a Horse.

CASES RELATED.

<i>Date.</i>	<i>Name.</i>	<i>Nature.</i>
1856.		
Oct. 28.	Mr. W. C. Branford.	Fracture of the Humerus, Radius ulna, and three Ribs of a Heifer.
„ „	— H. Eldred .	Case of Tetanus in a Horse.
1857.		
Jan. 13.	— W. C. Branford .	Leucorrhœa in a Mare.
	Idem .	Acute Laryngitis in a Heifer.
„ 20.	— F. J. B. Jones .	Glanders, supposed to arise from Infection.
„ „	— G. A. Drewe .	Farcy, supposed to arise from Infection.
„ „	— W. Watson .	Poisoning in Horses from Bryony and other Roots.

BOTANICAL SPECIMENS.

Feb. 4.	Mr. W. Watson .	White and Black Bryony (<i>Bryonia Dioica et Tamus Communis</i>): Mandrake (<i>Atropia Mandragora</i>); Birthwort (<i>Aristolochida, &c. &c.</i>).
---------	-----------------	--

Thus has a review of the proceedings been offered. Further to particularise would occupy too much time, and not be accompanied with a corresponding advantage.

And now, in taking my leave of office, I beg, gentlemen, to tender you my most sincere thanks for the honour conferred upon me in electing me your acting secretary. And allow me to state, that it has always been my earnest desire to render a faithful and impartial report of the proceedings that have taken place at our periodical meetings, and from the kindness and courtesy I have universally received at your hands, I am emboldened to hope that my humble efforts have met with your approval.

I beg to subscribe myself your most obedient servant,

WILLIAM C. BRANFORD.

MEETING OF THE COUNCIL OF THE VETERINARY MEDICAL ASSOCIATION, HELD AT THE ROYAL VETERINARY COLLEGE, OCTOBER 8th, 1857.

Present:—Professor Spooner, president, in the chair. Professors Simonds, Morton and Varnell, and Messrs. Batt, Broad, Stevens and Woodger.

The minutes of the last council meeting having been read and confirmed, the accounts were audited and found correct. The balance in favour of the association was £41 9s. 10d., and all outstanding debts disbursed.

Presentations to the library of the works of Mr. Bracy Clarke, through Professor Spooner, and of a 'Handbook of Veterinary Operations,' by Professor Hering, of Stuttgart, through Professor Simonds, were announced from their respective authors.

Resolved—That the thanks of the association be presented to these gentlemen for their donations. Still further additions were directed to be made to the library.

The prize essays having been read by a committee appointed for the purpose, it was resolved unanimously that the one bearing the motto

"SAUVITER SED FORTITER."

merits the silver medal.

The author, on opening the envelope that accompanied it, was ascertained to be, *Mr. James Irvine Lupton*.

Resolved—That to *Mr. F. J. B. Jones* be awarded a silver medal for the best anatomical preparation.

The essays discussed during the past session having been examined by a committee, it was resolved that to Messrs. W. Burt, A. E. Clarke, W. A. Cox, H. Cutting, C. Dayus and H. Flower, be awarded the especial thanks of the association, by which they rank as Honorary Fellows.

Resolved—That the subject of the prize essay for the coming session be: The general and descriptive anatomy, with the physiology, of the skin and its appendages, of the horse.

Resolved—that the anatomical preparation be: The injected blood-vessels of the genital organs of the male horse, *in situ*.

One third of the council having retired, in accordance with the law, they were unanimously re-elected, as were the other officers; and thanks being given to the president, and honorary secretary, the meeting broke up.

W. J. T. MORTON, *Hon. Sec.*

ARMY APPOINTMENTS.

WAR OFFICE, PALM MALL; Oct. 2, 1857.

7th Dragoon Guards.—Vet. Surg. William Varley, from the Military Train, to be Vet. Surg. vice Poett, who exchanges.

Oct. 20, 1857.

Royal Artillery.—Vet. Surg. Joseph Ball, to be Vet. Surg. vice J. D. Harrison, resigned.

Veterinary Jurisprudence.

FLETCHER (Thos.) *v.* COOK (Ed.)

Mr. Toynbee appeared for the plaintiff, and Mr. Brown for the defendant.

The question at issue was whether a warranty had or not been given with a horse. It was purchased by Mr. Fletcher, veterinary surgeon, of Lincoln, for his father, as Mr. Cook, who resides at Kexby, was bringing the horse to Lincoln April fair, for £32 10s. It was brought to the premises of Mr. Fletcher, in Lincoln, and the father gave a cheque for the money. The horse was taken to Postland, near Spalding, where Mr. Fletcher, sen., resides, and in about six weeks it was discovered that the horse was afflicted with poll-evil, a disease manifesting itself between the ears. The horse was sold again for £25 4s.; and the action was brought for £12 16s., the difference between the prices, together with the auctioneer's charges, and the expenses of keep.

Mr. Metherell, veterinary surgeon, of Spalding, was called in to examine the horse on the 6th of June (six weeks after the purchase), and found it suffering from poll-evil, which he said had in all probability been coming on for twelve months, as the disease was of slow growth, and he pronounced it the worst sort of unsoundness. There was also on the skin abrasions, which indicated old treatment of the disease.

For the defence, it was set up that no warranty had been given; however, all the evidence showed that the defendant would not give a written warranty, but that he positively gave a verbal one. Verdict for the plaintiff for the amount sought.—*Lincoln, &c., Mercury.*

MISCELLANEA.

MILK AS A MANUFACTURING INGREDIENT.

MILK now performs other offices besides the production of butter and cheese, and the flavoring of tea. It has made its way into the textile factories, and has become a valuable adjunct in the hands of the calico printer and the woollen manufacturer. In the class of pigment printing work, which is indeed a species of printing, the colours are laid on the face of the goods in an insoluble condition, so as to give a full, brilliant appearance. As a vehicle for effecting this process of decoration, the insoluble albumen obtained from eggs was always used, until Mr. Pattison, of Glasgow, Scotland, found a more economical substitute in milk. For this purpose buttermilk is now bought up in large quantities from the farmers, and the desired indissoluble matter is obtained from it at a price far below that of egg albumen.

This matter the patentee has called "lactalin." A second application of the same—milk—has just been developed, by causes arising out of the recent high price of olive oil, which having risen from 200 to 340 dollars a ton, woollen manufactories are now using the high-priced article, mixed with milk. This compound is said to answer much better than oil alone, the animal fat contained in the globules of the milk apparently furnishing an element of more powerful effect upon the fibres than the pure vegetable oil *per se*.—*The Cincinnatus*.

OBITUARY.

WE have to record the death, which occurred two or three months since, of Mr. John Gillingham, London. He obtained his diploma June 9, 1836. Also of Mr. John Cauch Quick, who died at St. Ives, Cornwall, of paraplegia, on the 23d of September last, aged 44 years. He obtained his diploma April 22d, 1841.

In the last mail from Calcutta, among the casualties in the Company's service, in the Bengal Presidency, is the name of Veterinary Surgeon Johnston, of the 2d regiment of Regular Cavalry.

The 10th Light Cavalry mutinied at Ferozepore on the 19th of August, and murdered Mr. Vincent Nelson, the Veterinary Surgeon of the regiment.

In a letter we have received from Mr. S. W. Jeffery, V. S. 4th Light Cavalry, Hon. E. I. C. Service, dated Umballah, July 11th, he says "Phillips, V. S., 3d Light Cavalry, was driving home from the artillery lines, with the surgeon of the regiment, when they were attacked by the Suddur Bazaar blackguards, who hacked them, and left them for dead on the road. Dr. Christie revived after some time, and being taken to the hospital, he ultimately recovered; but poor Phillips was killed on the spot. They then went to Dawson's house, who, poor fellow, was laid up with fever; they cut him and Mrs. Dawson to pieces, and then set fire to the house." Mr. Chalwin, we are informed, was murdered while defending his wife and child from the miscreants.

It is painful, very painful, to record these sad events. Thus have five members of our profession been ruthlessly massacred. Well may India be designated a surging sea of blood, rife with the groans of strong men, and the shrieks of helpless women and innocent children tortured and murdered :

"Take them, O great Eternity!

Our little life is but a gust,

That bends the branches of thy tree,

And trails its blossoms in the dust."—LONGFELLOW.

THE
VETERINARIAN.

VOL. XXX,
No. 360.

DECEMBER, 1857.

Fourth Series,
No. 36.

THE INTRODUCTORY ADDRESS

DELIVERED

By PROFESSOR MORTON,

AT THE ROYAL VETERINARY COLLEGE,

SESSION, 1857-8.

(Continued from p. 628.)

IT has been stated that the three grand means of instruction to the student of medicine are—the *clinique*, the *laboratory*, and the *dissecting-room*. Lectures have been much extolled, and with many they have the foremost place. There certainly can be no questioning their value, since they offer a condensation of facts in connection with a given subject; they also direct the mind and excite investigation. Still, I feel convinced that too many place a greater reliance on them than they merit, making them their only source of information, and in the end they find how shallow and superficial this is. On the other hand, some manifest the utmost indifference during the delivery of a lecture; the facts stated by the lecturer are unheeded by them, and when they retire from the lecture-room no further consideration is given to the subject. These are the two extremes, and both are bad. Now we have no wish to be thought “*maximus in minimis*,” since attention to petty objects sometimes indicates a little mind; yet as time is made up of moments, so matters of importance are often altogether lost from a want of attention to those things that seem but of minor worth. We might elucidate this position by a reference to some of the recent additions to medicine, such as the making of collodion from gun-cotton, and the use of glycerine, the sweet principle of fats;

but we are compelled to proceed. To derive real good from lectures, the mind should be kept in an unperturbed state, so that the information communicated may be duly impressed upon it and retained. The boisterous mirth, which is so common among students, both before and after the lecture, should never be indulged in. Notes, also, should be taken of the more important facts, by which the memory will become assisted, and at the same time strengthened; and at the close of the day, in the quiet of retirement, these may be transferred in an extended form to a book kept for the purpose; and this being carefully indexed, a volume will be obtained of no little worth, to which in afterlife reference may perhaps be made with advantage. I fear this is not very generally adopted. Most students content themselves with simply attending the lectures. This ought to be done, and the other not left undone.

So with reading, which is an indispensable auxiliary to study. How few really read as they ought. The book is in the hand and the eye runs over its pages, but where are the thoughts? Where the reflection? It is not enough that certain hours in the day be set apart for reading, the intellectual powers must be called into requisition, so that what is read may be understood and remembered. It is alone by thinking that knowledge becomes, as it were, a part and parcel of the mind. Let this be made habitual with you, remembering that an hour's reading with reflection is better than a week's without it. Here again your note-book should be by your side, to pen down from time to time the impressions the mind receives. Let this be done in as concise a manner as possible. You will thus epitomize the work, and insensibly become possessed of its truths. It has been well said that, in these days of mind-progress, the ignorant man is nobody, and his place nowhere; while the opposite obtains with the educated man, be his station in life what it may.

Again, let a consciousness both of the necessity of your becoming acquainted with what you read, and your ability to comprehend it, be always dominant in the mind, so that having resolved to acquire mental profit, you may thus ensure its possession. Confidence here is not misplaced; 'tis not presumption I am advocating, but self-energy. "Self-energy is the true life of man: the mind must, by its own independent exertions, seek, and, so far as its native powers will enable it, arrive at the modes, causes and tendencies of those propositions which it receives as truths, or substantially it believes nothing." But should doubts arise in the mind,

as sometimes they will, perplexing it, study and reason over the matter until they are dissipated and the truth is arrived at. Thus acting, the mental powers will become invigorated, and being once directed in the right way, they go on acquiring increased strength with exertion, like the body; while mistakes that may sometimes be made at the beginning often result in correct conclusions by their awakening fresh investigations. A doubt has been defined to be, an action of the inquiring mind; and certain it is that he who never doubts thinks but little. What is written, then, is not always to be received without inquiry as to its correctness, but is to be weighed and deliberately examined by you. You have a right to judge for yourselves, provided you are conversant with the matter treated of, otherwise you must receive the statements laid down with deference, and a belief in their truthfulness. Books are helpers and guides to your understanding, not dictators. Yet are they not to be despised, for it has been well remarked, "they correct private judgment, fill up the gaps of our personal acquisitions, and indicate new courses of observation. If they are suffered to aid and not warp the judgment, they are of immense utility. A man through them takes his predecessors into counsel: he sits on equal terms with Hunter and Harvey, and Newton and Galen, and Plato, and argues the matter without restraint. He does not veil his eyes before the great philosopher; but reading hard and critically, seems to say, 'soul for soul, mine is as good as thine; what hast thou to say about this that I cannot understand?' The modest man becomes defiant in his closet, and in silence vindicates the equal divinity of his nature. 'Go to, I will wrestle with thee,' is the thought working within him; and he does not quit the struggle until he can come off with the gay heart of a champion. Books are the granaries of wisdom, into which each man throws his sheaf of thoughts. In due season the seed is winnowed and resown to produce a fresh crop, which is being eternally garnered and renewed."

I need not enumerate the several works you will have to consult, this having been done so frequently before. You will find them all in the library belonging to *The Veterinary Medical Association*, to which you have an easy access; while the advantages to be derived from the mutual instruction afforded during the debates at the weekly meetings of that body, are too obvious to call for any comment or recommendation.

Yet are there some books wanted to complete the series, and I would that they too should emanate from this institution.

I have the pleasure of seeing near me those who are quite equal to the task—although it is no slight one—of furnishing them. Do you, gentlemen, appeal to them. Urge them to give you what you and the profession so much desire to have, and really want. It may be that they will respond to your appeal, and then you will have been influential in doing no little amount of good.

As to the Clinique and dissecting room, I feel assured that I need not labour to convince you of the necessity there is for a constant attendance on both of those essential means of instruction. At the first named you will always be present, listening to and storing up in your memories the practical observations made from time to time by the professors in their visits to the patients in the infirmary. You will there learn the diagnostics of disease, watch its phases, and become familiar with the treatment; each in his turn being called upon to act as dresser or clinical clerk. Here, too, your note-book will be required, for the more interesting and important cases should be recorded by you for reference hereafter; since all the study of the closet, and the most perfect book-knowledge you may possess, will not become a substitute for the personal observance of cases.

In the latter, the dissecting-room, you will be early and late, as here are to be dug up and laid the foundation-stones of your studies—anatomy being the basis of medical science. But you must not be satisfied with this, or the superstructure will never be raised.

I may be permitted, under this head, to introduce some advice given to students in the other branch of medicine—the human; making it, by a little alteration in the words, apply to you.

“Before you can hope to obtain much real advantage from the observation of cases of disease, you must be acquainted not only with the anatomy of the different organs of the body in a state of health, but you must understand the manner in which these do their work, their relation and dependence upon each other, and as far as possible the exact nature and relative importance of the offices they severally discharge. And before you can appreciate the effects of treatment in cases of disease, you must necessarily be fully acquainted with the action of remedies upon the healthy organism and with the general properties of the various drugs which are employed. Hence, the study of many subjects besides those which have a direct and obvious bearing upon the cure of disease has been found requisite, and extended experience has shown that before a man can become

a sound practitioner he must have received a good scientific education."

I am quite contented to leave to others "abler than myself," the further inculcation of the value and importance of these divisions of your studies. You know that each has its separate instructor; and each I believe to be actuated by a desire to do his duty, and ever ready to answer all inquiries. Nor are they untried men in their several departments, which is no small advantage.

And now, be not displeased with me while for a short time I dwell on the influence of habit. Of this be assured, there is much in it which attaches itself to us, for good or for evil, throughout life. The moralist has told us—

"If good we plant not, vice will fill the mind,
And weeds despoil the place for flowers designed."

And certainly in early life the acquirement of consistent habits has to do both with our position and happiness afterwards, if they do not determine them. Jeremy Bentham, referring to habits, thus expresses himself: "Like flakes of snow that fall unperceived upon the earth, the seemingly unimportant events of life succeed one another. As the snow gathers together, so our habits are formed. No single flake that is added to the pile produces a sensible change in it; so no single action creates, however it may exhibit, a man's character; but as the tempest hurls the avalanche down the mountain and overwhelms the inhabitant and his habitation, so passion, acting upon the elements of mischief which pernicious habits have brought together by imperceptible accumulation, may overthrow the edifice of truth and virtue." It is often the case that events seemingly of but trivial importance at the beginning, and of which, perhaps, we took little or no notice at the time of their occurring, result in matters of the greatest moment. It was a very little that sufficed to cause the stream to turn aside after it had issued from its source. The foot of the passing traveller did it, or a stone accidentally thrown there; yet it never afterwards regained a straight line, although it was always endeavouring to do so: hence the reason why it continued a tortuous course, until it became mingled with its parent ocean.

The habits I refer to—and I do it with very considerable reluctance, and only after a strong conflict in my mind between policy and duty—are the indulgence in alcoholic fluids and the use of tobacco. Sad evils have I known to result from both of these, and therefore I denounce them to the

utmost of my power. Alas! how many have made shipwreck on these quicksands. Their bark was fairly launched; all seemed to be favorable; hope sat smiling at the prow, and expectation filled the sails; when a few clouds of disappointment appeared in the distant horizon; the storm of temptation arose; instead of resisting, compliance was given; all power was at once lost at the helm; the vessel soon became the sport of the winds and the waves, and at last sank engulfed in the mighty waters! It may, perhaps, be as well for me to premise that I am not a total abstinence man. I think teetotalism, as it is called, a mistake, and a proof of moral weakness. "Use, not abuse," I would make my motto. But if so be I could not use without abusing; if I found my reason taken prisoner, and its controlling power lessened, then would I take the pledge. A glass of wine or of ale may not prove injurious when occasionally partaken of; indeed, I can see a reason why the one or the other will prove of service to the veterinary surgeon. In his avocation, he is often long exposed to the influence of the atmosphere, having frequently many miles to ride when visiting his patients. Now we know that the oxygen of the air is constantly acting on the organism, and unless there be materials for it to burn up, it will destroy the tissues of the body and produce exhaustion. A glass of ale or wine partaken of prevents this, as the oxygen attacks it rather than the animal tissues, and thus the individual is enabled both to endure the fatigue of a long journey and to go without food a longer time than otherwise he would be.

But let not this be an excuse for the repetition again and again of the glass. It is in excess that the evil lies. The act then becomes habitual, and in the end is sure to prove injurious. This is shown by the changes which alcohol undergoes in the system. Having entered the blood, it becomes converted into aldehyde, and then by a higher degree of oxidation, carried on at the expense of the animal economy—and the expenditure of force is necessarily accompanied with loss,—we have first acetic acid formed, then formic and oxalic acids, and lastly carbonic acid and water, by which it is eliminated. During the state of intoxication, it is stated that aldehyde is alone present in the blood. The indulgence in this debasing habit soon enervates and demoralizes both the mind and body. The excitement produced is quickly followed by languor and depression; this calls for the renewal of the stimulant, which being conceded the system after a short time becomes inured to its action, and a larger quantity is required to bring about the desired exhilarating effect than at first.

The President of the United States, Mr. Buchanan, in his reply to the congratulations of the students of the Franklin and Marshall College, on his election, after thanking them and giving them advice respecting their studies, and urging them to consider the responsibility that rested upon them to acquire knowledge, said: "There was one habit which if formed at college and in early youth would cling to them in after life and blight the fairest prospects. He alluded to the use of intoxicating liquors, and declared that it would be better for that youth who had contracted an appetite for strong drink that he were dead, or had never been born; for when he saw a young man entering upon such a career, a fondness for liquor becoming with him a governing passion, he could see nothing before him but a life of sorrow, and a dishonorable grave in his old age." The President might have added—if ever he should arrive at it; since most drunkards become prematurely old, and die unpitied while yet comparatively young. Solomon has admonished us "not to be among wine-bibbers;" nor "to look upon the wine when it is red, when it giveth its colour in the cup, when it moveth itself aright; for at the last it biteth like a serpent and stingeth like an adder."

The fluids I would advise you to substitute are tea and coffee; these being both refreshing and exhilarating. "Tea also increases the power of digesting the impressions we have received. We become by it disposed for thoughtful meditation, and, in spite of the movements of thought, the attention can be easily fixed upon a certain object; a sensation of comfort and cheerfulness ensues, and the creative activity of the brain is set in motion; while, through the greater collectedness and the more closely confined attention, the thoughts are not so apt to degenerate into desultoriness." Yet even this may be taken in excess; when increased irritability takes place, accompanied with restlessness and trembling of the limbs.

"While tea revives the faculty of judgment, and communicates a sensation of cheerfulness, coffee acts on the reasoning faculty, without giving to the imagination a much higher degree of liveliness; the powers of observation are by it increased, those of the judgment sharpened, while our activity of thoughts and ideas are manifested. In excess, it causes sleeplessness, and a state of excitement similar to intoxication, in which images, thoughts, and wishes, rapidly succeed each other. This, however, is quickly thrown off by exposure to the open air." These statements I have condensed from a work recently published by Professor Moleschott, of Zurich.

As it respects that pernicious plant, tobacco. What sad consequences have resulted from the common employment of this narcotic! What wasteful expenditure it involves; what enervation of the system it produces; what an annoyance it is to others, and how filthy! I have yet to see one real benefit that arises from it, used as it ordinarily is. To say it calms the perturbed spirits, and is conducive to the concentration of thought, is simply "a delusion and a snare." And if I am told it serves to while away time, I reply, time was made for far nobler purposes than that. And should the young anatomist, in extenuation, assert that its essential oil, when dissipated in fumes, acts as a disinfectant, I can tell him of a much better one, one that shall not act upon his nervous system, exhausting it, and creating an artificial want, nor give rise to dyspepsia with its thousand attendant evils, and render the body susceptible to become diseased on the application of a slight exciting cause. Shun it, my young friends, as you would poison,—for such it is. Avoid it as you would a serpent, for, like that reptile, it will in the end entangle you in its coils. Thousands have become its slaves, and now clank their fetters in misery. Dare you then by resisting to be free!

The editor of the *Lancet*, reviewing the arguments advanced for the use of tobacco, whether in moderation or excess, says:

1. To smoke early in the day, is *excess*.
2. As people are generally constituted, to smoke more than one or two pipes of tobacco or one or two cigars daily, is *excess*.
3. Youthful indulgence in smoking, is *excess*.
4. There are physiological indications which, occurring in any individual case, are criteria of excess.

And he concludes by the following sensible advice, with which I fully concur. "We most heartily desire to see the habit of smoking diminish; and we entreat the youth of this country to abandon it altogether. Let them lay our advice to heart. Let them give up a dubious pleasure for a good. Ten years hence, we shall receive their thanks."

Thus have I endeavoured to provoke in you a determination to do your duty, by showing you your responsibility, and how admirably you are constituted for it. I have likewise commented on the aids you will receive in the acquirement of knowledge. Nor have I hesitated to point out the evils that may arise from the indulgence in certain habits that militate against mind-progress. Assimilation appears to be a law of nature. You know if morbid matter be

brought in contact with the living frame, it engenders the like by catalytic or dynamic action, because the same elements are there to form it; and thus disease is propagated. So it is with morals. "He that walketh with wise men shall be wise; and the companion of fools shall be destroyed." Now, if on the one hand I would not have you debase yourselves by simulating the ignoble; so, I would not, on the other hand, have you affect what you are not. Nevertheless, there is an aristocracy I wish you to aspire to—the aristocracy of intellect. Let æsthetic culture be yours. Advance in this as far and as high as you can, for it ennobles man and proves his god-like nature. Set your standard high. Although it is not likely ever to be yours to wear

"The round and top of sovereignty."

Yet there is a nobler coronal wherewith to bind your brows,—the laurel-wreath that marks the triumph of the mind. In the words of Lord Carlisle: "Be yours a higher and more real ambition. It is not *who* you are, or *what* you are, that really signifies anything. The situations you may fill in life are beyond your control, and though they should be as exalted and as splendid as your most soaring dreams could paint, they might leave you mean, unhonored, and unloved. But the characters you may make for yourselves, in humble dependence on the blessing from above, are in your own power, and can never disappoint or fail you." With this I agree, believing that morally we are in a great measure what we choose or desire to be. The idler makes no progress, and is justly despised. The industrious man, on the contrary, gets rich, and is commended. The drunkard riots in excess of sensuality, and becomes enfeebled both in mind and body; while the temperate man, who is moderate in all things, rejoices in his strength, and is contented and happy.

There yet remains another weighty reason to be advanced—possibly the weightiest—why you should exercise all diligence in the acquirement of knowledge; and this I have purposely reserved until now; namely, the hold the educational question has on the public mind at the present day. The truth has at last forced itself on our legislators that, as a people, we are among the worst educated in Europe. Further, that if the children of the working-classes are not passed through the fire to Moloch, they are sacrificed to a no less rapacious tyrant, Mammon. They have, therefore, resolved that this state of things shall no longer exist;—the people shall be educated. To accomplish this, which is in every way so desirable, you may remember that a conference

was held not long since, at which the Prince Consort was present, supported by persons of the highest talent and authority in the country, and he closed his admirable speech with the following memorable words :—

“Our Heavenly Father, in his boundless goodness, has so made his creatures that they should be happy, and in his wisdom has fitted his means to his ends, giving to all of them different qualities and faculties, in using and developing which they fulfil their destiny, and running their uniform course according to his prescription they find that happiness which he has intended for them. Man alone is born into this world with faculties far nobler than the other creatures, reflecting the image of Him who has willed that there should be beings on earth to know and worship Him, and endowed with the power of self-determination, having reason given him for his guide. He can develop his faculties and obtain that happiness which is offered to him on earth, to be completed hereafter in entire union with Him through the mercy of Christ. But he can also leave these faculties unimproved, and miss his mission on earth. He will then sink to the level of the lower animals, forfeit happiness, and be separate from his God, whom he did not know how to find. Gentlemen, I say man has no right to do this. He has no right to throw off the task which is laid upon him for his happiness. It is his duty to fulfil his mission to the utmost of his power, but it is our duty, the duty of those whom Providence has removed from this awful struggle, and placed beyond this fearful danger, manfully, unceasingly, and untiringly, to aid by advice, assistance, and example, the great bulk of the people, who without such aid must almost inevitably succumb to the difficulty of their task. They will not cast from them any aiding hand, and the Almighty will bless the labours of those who work in his cause.”

To meet this requirement of the age the Universities are remodelling their statutes, so as to render them conducive to the improvement of the many. Appointments, both military and civil, under government, are now thrown open to competition; or, in the language of the Premier, “to competitive examinations, running one candidate against another, so as to bring out the character, presence of mind, and power of application of the different candidates.” The same also obtains in municipal situations.

Adverting to military education, Lord Palmerston, a short time since, stated that there are three requisites for making a good officer. There is first of all, general intelligence, and

that ordinary education which a gentleman is supposed to have obtained. Next, there is proficiency in his profession; and thirdly, there are those constitutional qualities which are eminently and beyond all others important in the composition of an officer." The same requisites, we hold, are necessary for the educated veterinary surgeon; and possessing these we ask no more. Besides this, it should be borne in mind that scientific acquirements are not now confined to those who may be said to belong to the professions. Many of the nobility are tinctured with a love of science, which is shown by several of them taking a prominent part in promulgating its principles, even as they operate in the every-day affairs of life, by lecturing on these subjects to the masses. Recently, too, the Society of Arts has instituted examinations into the efficiency of Mechanics' Institutes, and given prizes to several of their members for proficiency in Chemistry, Geography, English History, Mathematics, &c., the recipients being, according to Dr. Booth, shop-keepers' boys, schoolmasters' assistants, merchants' clerks, and apprentices; young men engaged from morning till evening in the discharge of those duties on which depends their daily bread. The present century may also be said to have witnessed the introduction of most of the Scientific Societies. Of these the Royal Institution of Great Britain took the lead, thus rendering science fashionable. To this succeeded Mechanics' and other associations, and those have caused it to be popular. Nor can the impetus thus given to knowledge be easily checked, or with impunity. We must go on to know, for it has been well remarked that, "in these better times men cannot creditably remain ignorant of the first principles of those practical sciences which are used in the arts of life, or continue uninformed of the phenomena of the world, the systems of distant nebulae, the infusorial life contained in a drop of water, or the laws which regulate our physical existence while on this earth, at once our palace and our prison-house." It is thus the right man will get the right place, and he alone will obtain it who has made himself conversant with the principles of his avocation. Seeing, then, that the peculiar character of the age is marked by onward progress, and that this is the result of education, what must be the inevitable consequence should *we* not continue to advance? Simply this, we shall be compressed between two forces; become "crumpled up," to use a familiar phrase. Be it yours, then, to guard against this by a proper employment of your time. Regard these opportunities for acquiring knowledge as "the pearls of time spangled with the dews of

heaven." Let them not be wasted, nor thought little of. Seize on the passing hours and improve them "as golden moments burnished on the dial of eternity." We are all too apt to think we have time enough and to spare, and that hereafter ample opportunities will be afforded us of gaining a position in life; but of this be assured there is no greater regret felt by a man in afterlife than that by which he is reminded of lost opportunities in his youth. Time, you know, is represented as an old man, nearly bald, having only a single lock of hair on his forehead. This has been designated the lock of opportunity, and you are advised to take hold of him by it, for, neglect to do so, and the opportunity is for ever lost. I believe the fag-ends of time are not sufficiently estimated by young men. It is astonishing, and I speak from experience, how much may be done by employing half-hours that otherwise would have been wasted. Having an object in view, let it be steadily pursued by you. Opportunities to accomplish it will make themselves. Each may achieve much if he be only determined. Since "Art is long and time is fleeting," and lost moments can never be recalled, it behoves us all to seize every minute and render it available for our purpose. Theophrastus, at the age of 107, said, life was too short for a student, and that it terminated just as we were beginning to solve its problems. "Life," says Dr. Franklin, "is made up of moments. If, then, you value life, take care of these and improve them." We little think how much might be accomplished by using up the minutes and hours in which, as it is commonly said, we have nothing to do. The aggregate of these constitutes a large portion of our lives, which may be profitably turned to account, if some division of science be systematically studied. It is well known that many of our most valuable works, in connection both with law and philosophy, have been written during these periods. Possibly the most striking exemplification we have on record of this is that of Lord Bacon. Although a lawyer, he found time to study philosophy, and became the originator of inductive reasoning, thus placing science on a solid basis. Indeed, before his time this can be said scarcely to have existed. It has been remarked that had he not lived Sir I. Newton would have been merely a star-gazer, and Sir Humphrey Davy and Wollaston empirics. In this our day, we may perhaps adduce a parallel instance in Lord Brougham.

Let not, then, frivolity of mind, and the love of pleasure, take the place of graver studies, occupying those hours which should by you be devoted to the acquirement of knowledge.

But whilst I am anxious that you should possess knowledge, I would not have you to be contented with a mere superficial acquaintance with your studies. Knowledge, to be of any real worth, should be solid in itself, and the mind thoroughly imbued with it. I fear the little impression it makes on many now-a-days arises from the greater facilities afforded for its acquirement as compared with those which existed only a few years since. When the mind is thus thoroughly imbued, supplies may be drawn from it as they are needed, without any fear of exhaustion, since every act of withdrawal increases instead of diminishes the mental stock.

Yours is pre-eminently the period of mental and bodily vigour. Let it not be abused. Your young blood courses freely through your veins, invigorating the system, and every limb and muscle rejoices in action. The cankering cares of life have not yet corroded the energies of your minds, lessening their capabilities; nor has disappointment chilled them with its paralysing touch. Your characters are susceptible of being moulded, and will readily receive the impress of either evil or good. You can now treat lightly those things which in afterlife may press more heavily upon you, and will do so, if the intellectual faculties are not properly trained in expectation of this. It has been said that, for the production of great characters and noble actions, there is wanted an early adoption of some object worthy of the pursuit. This is before you. You have deliberately chosen your profession, and some of you are looking forward to fill the places of those who have borne the heat and burthen of the day. Many eyes are upon you, and more is expected of you than of those who have preceded you, since your advantages are greater than theirs ever were. They may be said to have devoted their lives to the laying of the foundation-stones of the temple of veterinary science. It is yours to raise the superstructure thereon, and according to the value of the materials employed by you, and the judgment exercised in laying them, so will be the worth and durability of the temple. And we would that the building of this temple should have its prototype in that of old; in which there was no noise of hammer, nor axe, nor any tool of iron heard. There should be no discord, nor jealousy, which, like the bite of the serpent, leaves a poison in the wound; but each should know and do his work, giving and receiving support. Then remember the 'vantage ground on which you stand! You start with the information others have gathered. Firmly resolve, then, to make your profession your untiring study. With singleness of purpose devote

yourselves to it, then you will experience no failure, far less discomfiture. Difficulties and trials may, nay will, from time to time arise, but the mind having been rightly instructed, and the resolution firmly made, these will soon be surmounted. Be sedulous to have the memory well stored with useful facts. A fact a day is 365 facts a year, and these multiplied by the number of years you may live will, in the end, make you a wise man indeed, if by any possibility you could retain them: this we know is not the case, and hence the necessity of replenishing the mind with them from time to time. With speculations, these mere coruscations of the imagination oftentimes, you have little or nothing to do. They frequently prove only like *ignes fatui*, which lead the mind astray. You are studying the sciences, and these are the developments of truth. Physiology may perhaps allow a few of these conjectures to be entertained; but this only because as yet the real causes in operation to bring about certain results are not known.

Anatomy and chemistry may be said to rank among the exact sciences, or as being founded on facts, and these are the true foundations, or should be, both of physiology and pathology. I know I am withdrawing you from a pleasing field. Our imagination often leads us into delightful reveries that seem to expand the mental vision and to enlarge the boundaries of thought; but they are too often deceptive. In early life we are fond of myths and mysteries, and not unfrequently is it the case that the more abstruse and recondite the subject, the better we are pleased, and labour hard to become acquainted with it, even though it be one of questionable utility. An index of the strength of the human intellect has been considered to be its capability of grasping and separating the unseen and mysterious, yet true, from that which is mere fiction or false.

Nor must you think that with your period of probation here your studies are to cease. No: if you are true to your profession, you will be contented to be a student throughout life; for, however long you may have been engaged in the active duties of your calling, or to whatever position you may have attained, of this you may be sure, there is something yet to learn. To be idle, and indulge in luxurious ease, is unbecoming a man of science: it is his to be ever on the alert, looking out for that which is new, and rendering it available, if not for his own profit, for that of others; and it is to him the highest gratification to be enabled to do so.

It has been a question which is the most useful—a discovery of principles or their application? It is clear, in the

one we have honour conferred upon individuals only, in the other, mankind at large reaps the benefit. Nevertheless, the one must precede the other. Even in old age you must be youthful, as far as the science of your profession is concerned, for it is life-long; and of this be assured, you will never find knowledge to be either burthensome or useless.

In addition to this, I would say—let your conduct, dress, and address, be such as become gentlemen. Adopt not the style of the groom or stableman, and far less his general habits. These may be what is vulgarly called “flash,” but they are unprofessional, and derogatory to your vocation. I perhaps ought to apologise for speaking thus; I, however, know that some, when starting in life, have thought it necessary to act in this way, and even to court the company of those persons. Now, respect is due to every man, be he in whatsoever station he may, provided he honestly fills it; but it is a great mistake to suppose that there is any necessity for familiarity with all. Rather be solicitous to gain both the ear and the confidence of your employers, and you will then do well. Sir Horace Walpole said, “every man has his price.” A word to the wise is sufficient.

Now, as parsons preach sermons that are rarely ever approved of by all their congregation, so I cannot hope that all I have said in this lecture will be approved by all of you. I, however, have ventured to make these statements from a conviction both of their need and verity, and from a belief that their realisation will tend to your individual and collective benefit hereafter.

My desire is, that the profession should take a higher standing than it does; and this I have thought can only be obtained by adding to the studies of its pupils some of those other divisions of natural philosophy that bear upon veterinary medicine, as I have already said. Some of you may think I have done wrong in this, and blame me; others that I have not accomplished my self-imposed task to prove the need thereof, and if so, my inability I sincerely regret.

I am quite aware that there are a few connected with our profession who condemn science altogether. They pooh! pooh! it, and ask—What good has it done? They say, disease is as rife as ever it was, and its eradication not more successful now than in the days of our forefathers. They plume themselves on their practical experience, and contend that theory and practice are antagonistic. Their ignorance is the cause of this. What says Dr. Lyon Playfair on this head? “For a long time practice standing still in the pride of empiricism, and in the ungrateful forgetfulness of what

science has done in its development, reared upon its portal the old and vulgar adage,—‘An ounce of practice is worth a ton of theory.’ This wretched legend acted like a Gorgon’s head, and turned to stone the aspirations of science. Believe it not; for a grain of theory, if that be an expression for science, will, when planted, like the mustard-seed of the Scriptures, grow and wax into the greatest of trees.” Sound practice is theory rightly applied. Tact, and a readiness to act, are the results of experience. Think what you will, you may depend upon it that your employers will not be satisfied unless you can assign the “why and the wherefore” for what you have done, and it is science alone that will enable you to do this.

And now, to bring this already too long a lecture to a close. Let no over-weening opinion of your abilities cause you to become either presumptuous or careless. What thou hast, thou hast received, and it must be accounted for. Seneca has said—“Many a man would have been a wise man if he had not thought himself already so: if he had known himself to have been a fool he would have become wise.” Another old writer quaintly remarks—“If thou art puffed up, repine not if others prick thy swollen bladder with the pin of infamy.” Rely on it true wisdom is retiring and modest, while self-conceit is obtrusive, and being so, offensive, whatever may be the talents possessed by the individual. From the cradle to the tomb we are learners, if we are but sensible of our true state and condition as men; and this will induce us rightly to employ our time. You may, perhaps, remember what one of the greatest intellects this country ever saw said on this subject. I allude to Sir Isaac Newton: “I do not know what I appear to the world, but to myself I seem to have been only like a boy playing on the sea-shore, and diverting myself in now and then finding a smoother pebble, or a prettier shell, than ordinary, whilst the great ocean of truth lay all undiscovered before me.” Here was a consciousness of his inability to apprehend the greatness and grandeur of the Creator’s works, expressed with the utmost modesty.

It is no spirit of contentious rivalry that I am desirous of exciting among you, but one of laudable emulation—a desire to excel. Common to all of you are the means of acquiring information, and those of you who wisely avail yourselves of them may be compared to the bee, who gathers honey from the rose; while those of you who do not, may be said to resemble the spider, who draws only poison from the same beautiful flower.

Like the bee, too, should be your industry, rather than like that of the ant, an insect that labours for itself alone; whereas the former, not only has enough for itself always in store, but contributes a portion of its sweets to others. On this, an old writer thus expatiates: "Practice the sedulity of the bee, by labouring in thy calling; the community of the bee, by believing thou art called to assist others; the secrecy of the bee, that the greatest spy see thee not, nor supplant thee; the purity of the bee, that never settles upon any foul thing: so thou never take a foul way to a fair end, and the fruit of thy labour shall be honey, which is honour, ease, and plenty."

Nor let any jealous or malignant feeling be indulged in by you, checking your onward career; for remember if the winner of the Derby had stopped to kick he would have lost the race. Young men united together in one common profession, and pursuing the same studies, should condemn the petty animosities that divide man from his fellow in the ordinary walks of life; rather should they co-operate for the sake of humanity and science, of which veterinary medicine presents so admirable a field; and especially when so great a portion of it remains yet uncultivated, waiting to reward the industrious husbandman.

And to succeed, it is not enough to wish merely. The idler can do this. Wishes may be compared to rain-bow arches that span the intermediate difficulties, while they pass away with the vapour that gave rise to them. No man becomes great without assiduity. Reputation is not to be had by merely asking for it. A price is to be paid for it more or less costly by those who desire its acquisition. It would not indeed be worth possessing were it otherwise. An invincible determination to excel will, depend upon it, enable you to overcome all obstacles that may present themselves; and no talents however great, no circumstances however favorable, will compensate for the absence of this. "There is no royal road to knowledge." The hill of science is often steep and difficult, and, like travelling in mountainous countries, when you have laboured hard and reached one ridge and think it is the last, you look around and see others, still higher, to be ascended. These, too, you must mount, as each presents some new and compensating prospect from its summit.

Nor let any fear of incapacity cause you to relax in your efforts to acquire information; for as the door-step to the temple of wisdom, is said to be our ignorance, so perseverance will make up for any deficiency that may exist here. I do not think that talents are so much required by the student

as the will to labour, and to resolve is more than half to accomplish the thing desired. It is often the case that those who are the most apt in learning, to whom the acquirement of knowledge may be said to be easy, frequently do not prove the best pupils, nor the most successful practitioners. Their gifts often become their bane. They think they can at any time possess all they want, and they are therefore careless and indifferent. They allow the fitting and favorable opportunity to escape; it cannot be recalled, and they find out their mistake only when it is too late. I have frequently observed this, and would rather see the observant painstaking and attentive young man, than one possessed of the highest talents, which are either not applied by him, or misapplied. The one will rise in life, and the other will as deservedly sink. Difficulties often serve to awaken new energies, and to call forth latent powers. To yield at the onset will prove you to be a coward; to hesitate is to be beaten, while to advance is to gain the victory. Manfully, then, arm yourselves for the contest, nor fear the issue.

In making these observations it is obvious that I am desirous of encouraging the diffident and fearing. Unquestionably he who is blessed with talents, and adds to them diligence, is doubly wise, and deserving of the highest commendation. We are confessedly living in a period of great excitement. Competition in businesses and the professions is perhaps greater now than ever was before known. This brings into corresponding action the mind. All its energies are roused, and called into more frequent and stronger exercise; hence the necessity of maintaining *mens sana in corpore sano*, so that the balance between the moral and physical powers be not destroyed or lost; which will be the case if sensual indulgences are allowed.

Nor be too hasty at the commencement of your career. The world is large; "there is ample room and verge enough" for all. Many a young man begins now-a-days where he ought to leave off. He is "too fast." You should be contented, in the words of Longfellow,—

"To learn to labour, and to wait."

Fortunes are perhaps but slowly made in this profession, the wherewithal coming in so tardily. The professions generally are not like commercial speculations. Nevertheless by probity and persevering industry they may be, nay, have been, gained.

I have said nothing of the advantages derivable from science after this has taken place, and the successful individual has retired from the turmoil and cares of business. Under such circumstances as these it becomes to him a source of unspeakable solace and satisfaction; and this too long before "the silver cord is loosed, or the pitcher broken at the fountain;" while yet his bow abides in strength, and the mind retains its capabilities.—*A green old age!* How gratifying then to be able to look within, and to draw from the stores of experience useful information for the benefit of others; and especially to instruct and profit the young inquirer. Or, to be instrumental in assisting in carrying out some of the various schemes devised at the present day for ameliorating the condition of our fellow creatures, and adding to their comforts. I allude to the many proposed sanitary measures, all of which are, or should be, based on science. Surely this will gild the declining years of life, and add to their happiness, by giving more than a recompense in an approving conscience, arising from a conviction of having at least endeavoured to do some good. And is not this worth laboring for in early life? But this I must leave, having much exceeded the allotted time, for which I feel convinced you will pardon me.

I therefore conclude with the exhortation:—Be an excellent spirit yours, and "Onwards and Upwards," your motto. Heed not the imaginary lions in the pathway to knowledge, nor become captives to Giant Despair; remembering that although "the race is not always to the swift, nor the battle to the strong, yet you will not have laboured in vain, for a reward will be yours if you faint not."

"In the world's broad field of battle,
In the bivouac of life,
Be not dumb, like driven cattle!
Be a hero in the strife!

Trust no Future, however pleasant!
Let the dead Past, bury its dead!
Act—act in the living Present!
Heart within, and God o'erhead!"

Communications and Cases.

ON THE SOUNDNESS AND WARRANTY OF HORSES.

By CHAS. DICKENS, M.R.C.V.S., Kimbolton, in reply to
Mr. HAWTHORN.

THE communication which you did me the honour of inserting in the September number of your Journal, relating to the warranty of horses, was commenced by my stating that the object I had principally in view in directing the attention of the profession again to this matter, was an earnest desire that the excellent letters of Messrs. Hawthorn and Gregory should not pass unnoticed, thereby hoping that something definite might be come to on this all-important division of the veterinary surgeon's practice. I do not regret having acted as I did, as it has been the means of producing a second communication from Mr. Hawthorn, containing some amusing as well as much valuable matter, in reply to my observations.

Mr. Hawthorn appears to think that I acted rather indiscreetly in recommending my client to retain the horse with *diseased cord*, and he supports his views by quoting two extreme cases of this kind which occurred in his own practice. By referring to my letter, he will see that I did not take this step without due caution. I might have added that, the horse being a valuable one, I consulted a veterinary surgeon of high repute, whose written opinion I also laid before my client. I am pleased to find that we have no reason to regret the decision; and so well does he continue, that I rarely visit the animal without feeling disposed to break the last commandment. With hunters, more than with any other kind of horse, when we have to take into consideration their capabilities as to pace, weight-carrying, and adaptation to particular countries, in which their services may be required, we must occasionally, or rather perhaps their owners must, put up with some minor defects.

Mr. Hawthorn still clings to the title of his paper,—“TOO MUCH SCIENCE.” His fondness for this reminds me that I have somewhere seen the significant motto of,

—"I REJOICE IN THEE, MY CHOICE." It may be that it is attached to the escutcheon of my friend; and if so, any attempt to deprive him of his choice would be wrong.

I must, however, still adhere to my former opinion, that it is our duty to point out little things; this Mr. Hawthorn thinks we should not do, but surely that gentleman's extensive practice must often have reminded him, that small beginnings have great endings. A case in point occurs to my mind as I am writing this. A party purchased at a fair a young horse, and observing at the time a scratch on his side, was told in answer to his inquiries, that it had been occasioned by coming in contact with a nail; and as such it was thought of no consequence. Ten days afterwards the animal, to use his owner's phrase, went "stiff all over." A farrier was consulted, who pronounced the horse to be affected with "inward strangles." My opinion was then sought, and I only saw the case to pronounce it to be one of hopeless tetanus. In a few hours afterwards the animal was dead.

But again, had my friend read to the end of my letter, he would have found that I qualified the opinion I gave. I am fearful, however, that he followed the example of the old horse which he so amusingly tells the tale of as being taken from off the Uppingham and Oakham coach, and pulled up suddenly after a certain amount of work had been done.

I conclude by expressing an earnest wish that Mr. Hawthorn may long continue equal to do occasional duty in the service of the *Veterinarian*.

OBSERVATIONS ON THE LAW OF WARRANTY OF HORSES.

By E. A. GIBBON, M.R.C.V.S., Longdon.

DURING the past month, the subject of soundness and unsoundness of horses has occupied the attention of the profession, perhaps more than it otherwise would have done, in consequence of its having taken a prominent position in the pages of the *Veterinarian*. The matter, however, is one which may be said to be decided by the law, which, I believe, says that there must be disease, or the seeds of disease existing, to constitute unsoundness. Some of the writers appear to think that the law applicable to warranty should be *in part* revised; but I think the law-makers will not

be easily prevailed upon to do this, or, in other words, they will not infringe on the warranty of horses as a law, and let the opinion of veterinary surgeons rule in its place. I imagine that our great law-pleaders would say that such a proposition was something like "robbing Peter to pay Paul."

The employment of veterinary surgeons instead of lawyers may sound very well for one party; but how does it do for the other? Revising the law to them is practically removing it altogether.

Some people may be of opinion that the criminal laws do not keep men honest, but still they are necessities, and so, in fact, is the law of the warranty of horses, a thing which cannot be dispensed with. Now, if those who want to alter the law were to endeavour to do away with it, so that there were no longer any breaches of warranty nor actions for damages, they would, I think, be much more likely to succeed by thus striking at the foundation than by trying to knock off one limb of a professional avocation which seems to have been instituted purposely that some members of society should live and prosper by the folly of others. If they could convince our able statesmen that such a step would be an advantage to the country, it is possible they might succeed; but, by attempting to alter something merely to benefit one professional man to the injury of another, is not likely to be accomplished just yet.

I do not think that the fault of the conflicting statements regarding soundness or unsoundness is to be attributed to the state of the law; it lies more with us as a profession. There should be, I believe, more forethought exercised by many veterinary surgeons before giving an opinion as to whether a horse is sound or unsound. Without referring, as is frequently done, to any individual's statement or opinion, there should exist in the mind of the profession a greater uniformity as to what is disease of practical importance and what is not.

If the law states that a disease, or even the existence of the seeds of disease, constitutes unsoundness, we have done with that point; but we should be better agreed upon practical defects or diseases. Doubtless, veterinary surgeons are agreed that it is easy enough to state whether disease or no disease exists. No doubt that gentlemen finding a horse very lame from some injury affecting important organs will be able to say that such an animal is a diseased one, and therefore unsound; but we want to collect opinions upon what are often considered as trifling defects.

Perhaps some will say that these small things are of no

moment, and that, after all, it is but a difference of opinion, which leads to the painful scenes which are so often witnessed in our courts. Who, however, has not known that the opinions which are given have often reference, not to the consequences of disease, but to the existence of the disease itself?

If it be true that the law says disease is unsoundness, then the question which the veterinary surgeon has to decide is,—what is disease? For me to answer this does not require that I should name every known malady, but rather that I should take a broad view of the subject. Some veterinary surgeons may seem inclined, by the trifling character of some affections, not to agree with my definition of the term unsoundness,—the existence of disease,—but those gentlemen must see their error if they only reflect for a minute that disease, however trifling, causes unsoundness in the eye of the law. It may be very well for a veterinary surgeon, in giving a certificate of his examination of a horse, to state his opinion as to how far a disease which he has detected is likely to interfere with the utility of the animal; but every veterinary surgeon would greatly err if he ventured to give a certificate of the soundness of a horse which is at the time suffering from the slightest malady, because of its non-likelihood to prove injurious to the utility of the animal.

The next question which forces itself upon the mind is, what are we to understand by “the seeds of disease,” which the law also recognises as constituting unsoundness? *Firstly*, Does hereditary disposition constitute the existence of the seeds of disease? *Secondly*, Does congenital malformation do so? *Thirdly*, Does a disease, which had once affected the animal, and for which he has been treated, necessarily produce these seeds of disease? Before we can answer even the first of these queries, it seems necessary to divide it into two parts. Is an hereditary predisposition or a congenital malformation to be regarded as seeds of a disease? Now I think it is easy enough to answer the first part of this question. If hereditary predisposition is to be so considered, how many animals, or even human beings, are there who are not predisposed to some affection which has either descended directly from their parents or from some one of their ancestors?

With regard to congenital malformation, I think the balance of evidence would be in favour of such not constituting the seeds of disease. We will suppose, for instance, that a colt is foaled “knock-kneed” to such an extent that he is unable to get one leg before the other, except by a peculiar lateral movement. Now where, we may ask, is th-

disease, or its seed, in this case? The animal has a congenital malformation, which causes him to be perfectly useless; but certainly he is free from disease. Are there not many knock-kneed men in existence who live as long and are as free from ordinary affections of their legs as others? The malformation is an "eye-sore," and nothing else.

In the case I have named a malformation in the *shape* of the bones is present; and may there not be malformation in the *size* of the bone as well as in its shape? Such is my answer to the question of—Does congenital malformation constitute the seeds of disease? No man, I think, would like to put himself forward as a prophet, or to place himself on a level with a fortune-teller. Who can foresee disease? It may be a very good hobby for some people to ride; but I think that they would make a sorry figure before a limb of the law well versed in those matters. A man may have his opinion upon the point; but I do not think he would be justified in giving full utterance to it before the public.

In answering the third question—How far does the treatment of a disease which once affected the animal establish the existence of the "seeds of disease?"—I may remark that, doubtless, a difference of opinion may arise on the fact as to whether the disease has left the part as nature first formed it, or whether its structure is altered in any way. If parts are in their natural condition, then, doubtless, the animal is a sound one; but if there are still visible indications of disease having existed, it would without question be a case of dispute.

The safest course for the veterinary surgeon to take appears to me to be the giving of a certificate setting forth that he found certain marks indicative of pre-existing disease; but that at this time there was a total absence of all the ordinary signs of active disease. Were it my own case, I should also give my opinion as to the future consequences: in fact, that while I did not pass the animal as a sound one, I should state that the appearances of prior disease were not detrimental to him as a slave.

To illustrate this position, let us suppose a horse has been fired, and I should consider that such an animal is for ever unsound. Here are the marks of treatment for a disease; if none ever existed, why was the animal fired? Is there any known disease in which firing will cause the parts to be left as nature formed them? The operation may have assisted in the cure; but, of itself, will it entirely cure?

There are veterinary surgeons who argue that a fired horse is not an unsound one; and, further, that the act of firing

cures him. I fear, however, that such persons would not be able to explain to the satisfaction of a judge and jury the physiological action of the actual cautery in effecting such a special result. I would ask those who state that firing does not constitute unsoundness, how are we to draw the line of distinction, or how to know when firing is to be considered as not unsoundness, and when soundness? Surely no man will give it as his professional opinion that firing will cure all diseases. If it will not cure all affections, then assuredly it has so mutilated the common integument that it makes it impossible to form a right conclusion with regard to any abnormal state of the parts now present.

To conclude, who, it may be asked, should decide the question of soundness or unsoundness? Why the heads of the profession, or, in other words, the Veterinary College. Why should not the professors give free utterance to their opinions? Those who think proper might either adhere to these, or strike out a fresh path for themselves. If this were done we should all be better able to treat of the subject, whatever might be our particular views. There is nothing of more serious import to us, as a profession, and therefore none upon which we should endeavour to be unanimous.

Veterinary surgeons who have been duly educated at the College know full well that certain symptoms denote the presence of certain diseases, and therefore there is generally a fair unanimity in opinion among them as to the existence of a disease or not. But on the question of soundness, veterinary surgeons at present are almost like a ship on the broad ocean without a pilot. Doubtless a time will come when the lectures on veterinary jurisprudence will be even more extended, valuable as they now are. In the interim, however, let those of experience among us not abstain from freely expressing their views through the medium of the pages of *The Veterinarian*.

PULMONARY APOPLEXY IN A COW.

By W. D. BRAY, V.S., Broughton-in-Furness.

MARCH 16th, 1857, 5.30 p.m., I was requested to visit a half-bred Scotch milch cow, two and a half years old, belonging to G. Latham, Esq., of Broughton.

The messenger informed me that the cow had partaken of her food at noon, and at four o'clock had also eaten her boiled hay, &c., which is usually given to milch beasts in this part of the country, and that about five o'clock, she became suddenly ill, and gave little or no milk.

Symptoms.—The breathing is much accelerated and sonorous; and a great quantity of saliva flows from the mouth. The tongue is hot and enlarged; pulse 120; eyelids swollen enormously, completely closing the eyes, accompanied with great lachrymal secretion; the throat, neck, chest, legs, vulva, anus, much swollen, and congested; the stomach distended with gas (presenting the appearance of Hoove); the muscles of the spinal cord rigid; she continually tramples with her hind feet, evincing much abdominal pain; the evacuations are profuse and watery.

Treatment.—I immediately resorted to venesection. The blood came at first in a dark jelly-like mass, requiring considerable pressure to cause it to escape from the vein. Afterwards it flowed more rapidly, and was thinner and brighter in colour. I next administered a powerful stimulant, composed of *Æth. Sulph. Rect.*, cum *Spt. Æth. Nit.*, &c. in *Aqua*. Ordered the cow to be kept from food or water, and to be moderately clothed.

10 p.m.—On visiting my patient I found her much improved. The breathing is more composed; the muscles of the spine are less rigid; the swellings of the throat, neck, and chest, are much reduced, and that of the eyelids also. There is but little lachrymal secretion, although the eyes are still dull. Salivary discharge has ceased. Pulse is 92, and the animal shows no pain. Ordered her a bran mash.

17th, 8 a.m.—Patient much better. Pulse 60 per minute; breathing tranquil. The tumefaction of the parts before mentioned has entirely disappeared. She has partaken of a mash, and appears eager for more. She has also given about half her usual quantity of milk. Ordered her a tonic draught. Allow bran mashes and hay, *ad libitum*; and repeat the same on the morrow.

19th, 6 p.m.—The cow is perfectly recovered. The appetite has returned, and she gives her usual quantity of milk.

The animal subsequently went on well.

Remarks.—The above disease is very prevalent in this part of the country. It attacks beasts irrespective of age, sex, or mode of living, and is called by the provincial name of *hawk*s. Its attack is so sudden, that death often ensues in an hour. I have never known a single case of recovery, where bleeding

was not resorted to, and that early, and it should be carried on till syncope is produced.

The *post-mortem examinations* disclose the awfully sudden character of the disease. The muscles of the tumefied parts are found gorged with blood, apparently from rupture of the blood-vessels, and the lungs are invariably congested; but the most striking object is the heart, which is greatly inflamed.

CASE OF RUPTURE OF THE SPLEEN.

By J. W. MAW, Thornton Pickering.

ON the 12th of September, I was called to attend a cart-filly, three years old, the property of Mr. Robert Topham, of Scampston Melton. I found my patient to be suffering from an attack of strangles in its severest form. Her head was enormously swollen, and several abscesses had already formed. Three of these I was enabled to open at once; and after applying the usual dressings, I left her, but had not been gone more than half an hour when I was recalled; the messenger telling me that a sudden change had taken place in the symptoms. She was now very restless, and in a profuse cold sweat; the countenance was anxious, pulse 100; breathing laboured, visible mucous membranes pale, and extremities cold. She was frequently sighing, and showed a great determination to place her head upon her back, about opposite to the sixth or seventh dorsal spine. I gave no hope of her recovery, and in three hours she died.

Post-mortem examination. A large quantity of coagulated blood was present in the abdomen; but, at first sight, the viscera had a healthy appearance. On turning the intestines aside, so as to expose the spleen, this organ was found to be both enormously enlarged and also ruptured. It weighed 1 st. 4 lb. Its structure was evidently softened and otherwise altered. It appeared to be composed of a compacted mass of friable blood.

I afterwards learned that the animal had been put under the influence of iodine, but that she had refused her food only three days previous to her death.

STRANGULATION OF THE INTESTINES OF AN OX.—“GUT-TIE.”

By VINCENT VINE, Student.

IN the spring of the present year, I was requested to attend a large Sussex ox, nine years old, the property of John Shoosmith, Esq., of Berwick Church Farm. The messenger informed me that he was suffering from colic, or stoppage of the intestines, and had been in pain, since 5 o'clock in the morning. On my arrival, about 10 o'clock, a.m., I found the animal labouring under much abdominal pain. He was striking at the belly with his hind-legs, stepping backwards in a peculiar manner, by placing one hind-leg directly behind the other, bowing his back, and occasionally lying down for five or ten minutes at a time. The pulse was small and accelerated, breathing rather quicker than natural; all desire for food had ceased, and rumination was suspended. On an examination of the animal *per rectum*, I found that a small quantity of blood and mucus, unmixed with fæces, existed in the intestine. I could also distinctly feel a cord or membrane apparently attached superiorly to some part of the Psoas muscles, but I could not satisfy myself as to its inferior attachment. On gently pulling at the cord, the animal evinced a greater degree of pain. I informed the owner that the animal was “knit” (the term which is used in this county by the uneducated practitioner), this being the same disease which Mr. Youatt calls “cords,” or “gut-tie.” As my prognosis was not unfavorable on the whole, I recommended that an operation should be had recourse to. In the mean time, I gave—

Mag. Sulph., ℥j,
Pulv. Zingiberis, ʒij;
Aquæ, Oj. M.

3 p.m., as no improvement had as yet taken place, the owner gave his consent to the operation being performed without loss of time. I therefore proceeded to cast the ox on his left side, and secured three of his legs together. A rope was then placed on the right hind-leg, and the limb pulled in a backward direction, to render tense the muscles. I next cut through the common integument, the external and internal oblique muscles, the transversalis abdominis, and the peritoneum, between the spinous process of the ileum and the last rib, about opposite to the transverse process of the

fourth lumbar vertebra. Into the opening thus made, I introduced my hand in a backward and downward direction, when I found the cord, and which was apparently united to the Psoas muscles, about opposite to the last lumbar vertebra, by strong tendinous connections, the inferior part being attached a little to the left of the symphysis pubis. The intestines were hanging as in a sling. I next separated the cord from its *inferior* connection, and having thus released the intestines, brought it to the edge of the wound, and divided it, excising a portion thereof. I then drew the right leg forwards, put four sutures through the edges of the wound, and allowed the animal to rise. The operation lasted about seven or eight minutes.

At 8 p.m. my patient was free from colicky pains, but shivering. I therefore gave—

Mag. Sulph., ℥viij.

with a diffusible stimulant. An enema was also thrown up.

6th,—9 a.m. The animal was easy; he had voided some fæces, which were stained with blood and mucus. As he showed a disposition to partake of food, I ordered him some bran mashes, and linseed gruel. From this time he went on to my perfect satisfaction, and was quite restored in about a week. His bowels required attention, and the occasional use of an enema. The wound also had to be fomented, in consequence of the swelling which supervened on the operation.

[As this form of strangulation of the intestines of the ox is not of unfrequent occurrence, as we are informed, in several parts of the country, and as it is involved in much ambiguity, we shall be obliged to our professional friends, if they would enable us to investigate its true nature, by an examination of the structures implicated. This could best be done by the slaughter of an affected animal in our presence, it being necessary to make a minute dissection.]

Facts and Observations.

TREATMENT OF BROKEN KNEES.

MR. J. BROWN, M.R.C.V.S. London, writes that he has found the following powder very efficacious in the healing of wounds of the knee of the horse, caused by falling:

℞ Hydrarg. Bichlorid., ʒj;
 Pulv. Zinci Sulph.,
 Pulv. Alumin.,
 Bol. Armen., āā ʒj. M,

"I employ," he says, "no bandages nor any kind of compress over the wound, as I consider that these rather retard than otherwise the healing process, by impeding the circulation; not to say anything of the confined pus, which is often of a fetid character, and which they keep for days in contact with the part. By the treatment I advocate, an eschar is soon produced on the surface of the wound, and under it the healing process quickly goes on.

Perhaps I cannot do better than illustrate what I mean by narrating very concisely the following case:

In the beginning of October of the present year, a horse belonging to a town carman, fell and broke both his knees. The off-knee was the most lacerated. After cleansing the wounds thoroughly from all extraneous matter, such as dirt or gravel, I sprinkled the parts over with the powder, ordered that he should be placed in a loose box, and put on a mash diet. On the following day an aperient was given.

By this treatment an eschar was soon produced on the surface of the wound, and the suppurative process went steadily on. The wound of the off-knee required a frequent removal of the pus, and this I gently squeezed out with a sponge, without displacing the eschar. The wounds very soon healed, leaving a much less cicatrix than is usual in such cases. I believe that this simple treatment, if persevered in, would cut short many a long and tedious case of this kind.

REMEDY FOR HYDROPHOBIA.

At the last meeting of the Academy of Sciences, M. Guérin-Meneville, sent in a letter on the *Cetonia Aurata*, or rose-beetle, which for some time past has engrossed the attention of naturalists, as a remedy for hydrophobia. M. Meneville stated, from personal experience, that in the go-

vernments of Voroneje and Kocersk, in Russia, it is customary to give dogs half a beetle in powder, from time to time, mixed with bread-crumbs, as a preservative against that disease; and that the Russians affirm that there are persons who cure hydrophobia radically by means of the fresh juice of a certain plant, which is not named.

CATTLE EPIZOOTIC AT TRIPOLI.

THE accounts received from Tripoli state that the English consul had caused to be posted up an order from Constantinople, allowing the export of cattle. The government of the Bey, however, has refused to obey this order, in consequence of the scarcity occasioned by the ravages of the epizootic disease and the consequent wants of the country.

ELECTION OF MR. J. S. GAMGEE AS SURGEON TO THE QUEEN'S COLLEGE, BIRMINGHAM.

THE Council of Queen's College, Birmingham, have acted upon the Memorial of the Professors. They have reconsidered the appointment of Surgeon to the Hospital, and at a special Council meeting, on the 13th inst., the election of Mr. West was declared "null and void." We are informed that the ground assigned was, that his votes had been obtained by premature canvass. Mr. Gamgee was elected forthwith, and Mr. Knowles transferred the wards formally to him in the presence of the authorities. On Monday he delivered the introductory lecture in Queen's College.

THE RELATIVE NUMBER OF THE RED CELLS OF THE BLOOD.

MM. Andral and Gavarret, the best authorities on the analysis of the blood, found by numerous observations that the mean average of red cells was 127 parts in 104 of the vital fluid in healthy subjects; in cases of confirmed anæmia the proportion fell to 65, or nearly one-half less than the healthy standard; whilst in plethoric individuals it rose to 141. Becquerel and Rhodier found the average higher in the male than in the female, whilst early adult age seems to be the period when the cells attain their maximum in both sexes—the health being good. These corpuscles are always most numerous in the blood of persons of the sanguineous and fewest in those of the lymphatic temperament.

Extracts from British and Foreign Journals.

MANAGEMENT OF DAIRY CATTLE. 1854 to 1856.

By T. HORSFALL.

(Continued from p. 576.)

ON questioning my dairywoman, in December, 1854, as to the proportion of cream and butter, she reported nearly one roll of 25 oz. of butter to one quart of cream. I looked upon this as a mistake. On its accuracy being persisted in, the next churning was carefully observed, with a like proportion. My dairy cows averaged then a low range of milk as to quantity—about eight quarts each per day. Six of them, in a forward state of fatness, were intended to be dried for finishing off in January; but, owing to the scarcity and consequent dearness of calving cows, I kept them on in milk till I could purchase cows to replace them, and it was not till February that I had an opportunity of doing so. I then bought four cows within a few days of calving: they were but in inferior condition, and yielded largely of milk. Towards the close of February and March, four of my own dairy cows, in full condition, likewise calved. During March, three of the six which had continued from December, and were milked nearly up to the day of sale, were selected by the butcher as fit for his purpose. Each churning throughout was carefully observed, with a similar result, varying but little from 25 oz. of butter per quart of cream; on Monday, April 30th, 16 quarts of cream having yielded 16 rolls (of 25 oz. each) of butter. Though I use artificial means of raising the temperature of my dairy, by the application of hot water during cold weather, yet, my service-pipes being frozen in February, I was unable to keep up the temperature, and it fell to 45°. Still my cream, though slightly affected, was peculiarly rich, yielding 22 oz. of butter per quart. Throughout April the produce of milk from my 15 dairy cows averaged full 160 quarts per day.

My cows are bought in the neighbouring markets with a view to their usefulness and profitableness. The breeds of this district have a considerable admixture of the short-horn, which is not noted for the richness of its milk. It will be remarked that during the time these observations have been

continued on the proportion of butter from cream, more than one half of my cows have been changed.

Having satisfied myself that the peculiar richness of my cream was due mainly to the treatment of my cows, which I have sought to describe, it occurred to me that I ought not to keep it to myself; inasmuch as these results of my daily practice not only afforded matter of interest to the farmer, but were fit subjects for the investigation of the physiologist and the chemist. Though my pretensions to acquirements in their instructions are but slender, they are such as enable me to acknowledge benefit in seeking to regulate my proceedings by their rules.

In taking off the cream, I use an ordinary shallow skimmer of tin perforated with holes, through which any milk gathered in skimming escapes. It requires care to clear the cream; and even with this some streakiness is observable on the surface of the skimmed milk. The milk-bowls are of glazed brown earthenware, common in this district; they stand on a base of 6 to 8 inches, and expand at the surface to nearly twice that width. Four to five quarts are contained in each bowl, the depth being 4 to 5 inches at the centre. The churn I use is a small wooden one, worked by hand, on what I believe to be the American principle. I obtained it from Messrs. Dray and Co. I have forwarded to Professor Way a small sample of butter for analysis; 15 quarts of cream were taken out of the cream-jar, and churned at three times in equal portions—

The first five quarts of cream gave	.	.	127 oz. of butter.
The second five	"	"	125 "
The third five	"	"	120 $\frac{1}{2}$ "
			<hr/>
			372 $\frac{1}{2}$ "
= to 24 $\frac{3}{4}$ oz. per quart.			

At a subsequent churning of 14 quarts of cream—

The first seven gave 7 rolls, or	.	.	.	175 oz. of butter.
The second seven gave 7 rolls 2 oz., or	.	.	.	177 "
				<hr/>
				352 "
= to 25 $\frac{7}{8}$ oz. per quart.				

On testing the comparative yield of butter and of butter-milk, I find 70 per cent. of butter to 30 per cent. of butter-milk, thus reversing the proportions given in the publications to which I have referred. An analysis of my butter by Professor Way gives—

Pure fat or oil	82·70
Casein or curd	2·45
Water with a little salt	14·85
Total	<hr/> 100·00

The only analyses of this material which I find in the publications in my hand are two by Professor Way, 'Journal,' vol. xi, p. 735, "On butter by the common and by the Devonshire method;" the result in 100 parts being—

	<i>Raw.</i>	<i>Scalded.</i>
Pure butter	79·72	79·12
Casein, &c.	3·38	3·37
Water	16·90	17·51
Total	<hr/> 100·00	<hr/> 100·00

The foregoing observation of dairy results was continued up to grass time in 1855. In April and May the use of artificial means was discontinued without diminution in the yield of butter or richness of cream, the natural temperature being sufficient to maintain that of my dairy at 54° to 56°.

I now proceed to describe the appearances since that time. In the summer season, whilst my cows were grazing in the open pastures during the day and housed during the night, being supplied with a limited quantity of the steamed food each morning and evening, a marked change occurred in the quality of the milk and cream; the quantity of the latter somewhat increased, but instead of 25 oz. of butter per quart of cream, my summer cream yielded only 16 oz. per quart.

I would not be understood to attribute this variation in quality to the change of food only; it is commonly observed by dairy-keepers that milk during the warm months of summer is less rich in butter, owing probably to the greater restlessness of the cows, from being teased by flies, &c. I am by no means sure that, if turning out during the warm months be at all advisable, it would not be preferable that this should take place during the night instead of during the daytime. Towards the close of September, when the temperature had become much cooler and the cows were supplied with a much larger quantity of the steamed food, results appeared very similar to those which I had observed and described from December to May, 1855. During the month of November the quality was tested with the following result.

From 252 qts. of old milk were taken 21 qts. of cream, of which 20 were churned, and produced 468 oz. of butter, which shows—

27·50 oz. of butter for 16 qts. of new milk.
 23·40 oz. „ „ each qt. of cream.

During May, 1856, my cows being on open pasture during the day, were supplied with two full feeds of the steamed mixture, together with a supply of green rape-plant each morning and evening.

The result was that from 324 qts. of old milk 23 qts. of cream were skimmed, of which 22 were churned and produced 515 oz. of butter, which shows—

24 oz. of butter from 16 qts. of new milk.
 22·41 oz. „ „ each qt. of cream.

My food during the winter season 1855-56 has slightly varied from that of 1854-55. In October, a respectable maltster in this village, who keeps dairy cows, asked me to purchase malt combs, of which he had a surplus. Having learnt from him on inquiry, that from the use of them he obtained a larger yield of milk, without detriment to the condition of his cows, I was led to think that they contained a considerable per centage of albuminous matter. I took some on trial and forwarded a sample for analysis, which I supply, together with one of bran :

<i>Malt Combs.</i>				<i>Bran.</i>			
Moisture .	.	.	3·21	Moisture .	.	.	12·85
Oil .	.	.	2·96	Oil .	.	.	5·56
Albuminous matter .	.	.	23·87	Albuminous matter .	.	.	13·80
Starch, sugar, &c. .	.	.	45·94	Ash*	.	.	6·11
Woody fibre .	.	.	18·80	Other constituents .	.	.	61·68
Mineral matter .	.	.	5·22				
<hr/>				<hr/>			
J. T. WAY.			100·00	ANDERSON.			100·00

—*Journal of the Royal Agricultural Society.*

(*To be continued.*)

ON THE INFLUENCE OF CHOLERA ON THE LOWER ANIMALS.

By W. LAUDER LINDSAY, M.D., Perth.

(*Read before the Epidemiological Society, London, June 2, 1856.*)

(*Concluded from p. 651.*)

FROM observations and experiments made in various parts of Central Europe, and to a less extent in India and Britain, it would appear that, coincident in date with cholera epi-

* The ash contains 50 per cent. phosphoric acid.

demics in man, there have frequently appeared cholera epizootics among the inferior, and especially the domesticated, animals; that this cholera in animals resembles that of man in its symptomatology and pathology; and that it is communicable, not only between different individuals, but between different species and genera, and also to and from man. Immediately after the first visitation of cholera to Europe, in 1832, several excellent reports appeared on the effects of the epidemic poison on the lower animals—the best which I have seen being that of the Faculty of Medicine at Vienna, relative to the epizootic in Lower Austria, Galicia, Moravia, and Bohemia.* The latter narrates that, while no animals were exempt from the influence of the “epidemic constitution of the atmosphere,” the disease most closely resembled human cholera in animals having similar structure and habits to man, such as the dog. The chief animals in which cholera has been noted to have occurred in Europe, are horses, cattle, dogs, cats, and poultry,—or, in other words, the domestic animals; while in India, and other foreign countries, in addition, racoons, camels, zebras, and monkeys have been mentioned. Records also mention a number of other animals, but the evidence is not so conclusive, as I shall immediately show. Few additions have been made to our knowledge of the subject since 1832; but the scattered cases which are occasionally recorded, are of sufficient interest to show how much remains to be observed. A recent letter from Dr. Furlong, Antigua,† states that, during the prevalence of cholera at Trinidad, travellers, in passing through the woods, found the monkeys in large numbers dying and dead of the disease; and he remarks, that domesticated or pet monkeys were equally affected. It is of interest to know, that the same animals in Trinidad were similarly affected by variola when it was epidemic. It has frequently been observed in this country, that, prior to or during epidemics of cholera, there have been extensive and sudden diseases in cultivated plants, such as the potato, and in domestic as well as wild animals, such as cattle, horses, sheep, rabbits and hares, poultry, game, crows, sparrows, and other birds, and even fish. But there is no conclusive evidence that the disease was, in these cases, cholera. The coincidence in date would, however, point to something more than an accidental relationship. In many of the recorded cases of cholera in the lower animals, the arguments in favour of

* A most interesting abstract will be found in the ‘British and Foreign Medical Review,’ January, 1837.

† ‘Lancet,’ December 2, 1854.

the choleroïd nature of the disease are far from conclusive or convincing; in others they are only presumptive; in very few is the proof satisfactory. Speculations, founded on appearances or resemblances, have been allowed to gain the ascendancy over rigid scientific demonstration—coincidences have been too much regarded as synonymous with effects of a common cause—the *post hoc* has been mistaken for the *propter hoc*. Observation and argument alike have been loose and unscientific: chemistry, histology, and pathology have seldom or never been employed as adjuncts to the inquiry. The deficiency of pathological examination, indeed, may be considered the most serious defect of all the cases of cholera in animals as yet published. The facts hitherto recorded would lead to the inference, that the cholera poison is equally deleterious to plants, the lower animals, and man, though it produces somewhat different effects in those different classes of organized beings. Such facts, however, from what I have already said, cannot be considered firmly established. It should be the object of future researches to corroborate or disprove them. So soon as it can be shown satisfactorily that epizootics during, or preceding, periods of epidemic cholera are, in their causation and nature, choleraic, a most important point is gained; for then cholera becomes subject to scientific experimentation. The causation of epizootic diseases has frequently been referred to the fact of animals feeding on plants affected with epidemic disease. This merely refers us a step further back in the inquiry, whose features it does not otherwise alter; it also indicates the necessity and importance of investigating, at the same time, and in the same manner, the epidemic diseases both of plants and animals, inasmuch as they are calculated to throw light on each other.

As in human cholera, we must be prepared to investigate the etiology of the subject under two distinct heads: we must, on the one hand, examine the nature of the germ—the ferment—the ærial poison or miasm, of what nature soever, which is the immediate excitant of the disease; and, on the other, the nature of the soil or nidus in which alone this germ will develop itself—the predisposition, without which the poison is inoperative. As in human cholera, also, we are more likely to arrive at satisfactory results regarding the predisposition than the exciting cause—the suitable soil, rather than the poison germ itself. But, without a thorough knowledge of the subject of predisposition, the investigation of the essential nature and *modus operandi* of the cholera poison cannot be properly undertaken. The artificial crea-

tion of a predisposition to contagious diseases, I hold to be one of the chief elements of success in experimentation on the transmissibility of cholera to animals. The chief features of the laws of the diffusion of epidemic cholera in man must also be borne in mind: for instance, its unequal and partial distribution—its attacking places characterised by certain conditions of temperature, moisture, drainage, &c.—its varying duration—its course, in opposition to ordinary physical laws, &c.

We are not to look, in epizootic cholera, for all the symptoms of human cholera, as laid down in systematic treatises or text-books. Even in man, the conventional symptoms are frequently absent; and the only one which can be said to be invariable, and hence essential, is collapse. In proportion as cholera is becoming domesticated among us, so do we find its types and symptoms undergoing modification; and, if such be the case in man, how much less should we expect to find the same symptoms in animals differing essentially from him in structure, habits, and food? In proportion, however, as an animal resembles man in the structure of its digestive apparatus, in the nature of its food, and in its habits, so shall we expect to find the characters of the disease resembling those in the human subject. Thus we shall find the dog—man's most constant companion—one of the best subjects in which to study the cholera of the lower animals. The symptomatology of epizootic diseases is somewhat puzzling, and liable to lead into error. For instance, cases of sudden death are common in cattle and other ruminants, proceeding from acute intestinal lesions; while many symptoms, resembling isolated or individual symptoms of cholera in man, such as cramps, vomiting, thirst, and diarrhœa, are very common as symptomatic of mild affections in some of the lower animals, such as the dog. The absence and presence of particular symptoms are thus alike delusive; hence, nothing can atone for a deficiency in accurate observation, especially in pathological examination. The subject of cholera in the lower animals cannot be perfectly understood without a knowledge of other epizootic diseases; while, again, for the satisfactory investigation of the latter, a familiarity with the ordinary sporadic diseases to which the lower animals, domesticated and wild, are subject, is necessary. The study of epizootic cholera by medical practitioners would probably give a stimulus to the study of veterinary medicine, and lead especially to a greater cultivation of veterinary pathology, some departments of which bear specially on our present subject. Among other points in the patho-

logy of epizootic diseases which appear to demand greater elucidation in reference to cholera or choleroïd affections, is the pathology of the gastro-intestinal mucous membrane, along with its morbid secretions or discharges, with a view to the establishment of a differential diagnosis between cholera and allied diseases

The chief classes of cases to which the attention of observers should be directed are—

I. Epizootic diseases occurring during periods of immunity from epidemic cholera in man, preceded, or not, by sudden and extensive disease in cultivated plants, such as the potato, vine, and cereals, and which are either marked by choleraic symptoms, or by sudden deaths, without any symptoms.

II. Epizootic or sporadic diseases coincident with epidemic cholera in man, and marked by similar symptoms, or by sudden deaths.

III. Seizures in certain domestic animals—especially dogs and cats—after licking the evacuations, or inhaling the effluvia of the clothing or bodies, of living or dead human cholera patients, or which have been exposed to other known sources of infection.

The latter class of cases is invested with peculiar interest, and they ought to be carefully sought for and observed. A few cases are on record of dogs, which have accidentally swallowed the cholera evacuations of their masters or mistresses, being seized with and dying of cholera; and it has also been stated, that animals thus affected have communicated the disease to man, in whom it has proved fatal.* Here, then, we have instances of the double transmissibility of cholera, [viz.,—to and from man and the lower animals. But, in a question of such importance, it is necessary that the facts be repeatedly confirmed before they can be received as established and undeniable. In the examination of such cases, it is of great importance to determine whether the apparent cause of the disease was the swallowing of the evacuations, or the inhalation of the poison, or both—whether, in other words, the intestinal or the cutaneous and pulmonary systems were the first recipients of the poison. It is almost unnecessary to point out the bearing which the decision of such a question has upon the theory recently advanced by Dr. Snow and others—viz., that the germs of the disease are received directly into the alimentary canal, and there produce their poisonous effects. It is, moreover, advisable to note the precise period after discharge at which the evacuations were swallowed, since recent authors maintain that these are poisonous, and can communicate the disease, only at particu-

* Some such instances will be found in a valuable paper of Mr. Marshall's on the Communicability of Cholera to Animals. 'British and Foreign Med.-Chirurgical Review,' April, 1853.

lar stages of decomposition. In connection with this point, the experiments of Thiersch, on the Continent, may be remembered: he found that mice were seized with fatal cholera on swallowing evacuations only on the lapse of a certain period after evacuation.* Some experimentalists hold that the cholera poison resides in the fixed, others in the volatile, products of decomposition of the evacuations; while some regard these dejections as wholly innocuous. This contrariety of opinion—this opposing testimony of experimentalists—is only one instance of the necessity of endeavouring to decide the question by observation on cholera among the lower animals. It may also be here mentioned, that there are recorded cases of men having accidentally or intentionally swallowed large or small quantities of the evacuations of cholera patients without subsequent bad effects; they are, however, of comparatively little value.

An appropriate supplement to remarks on the natural influence of cholera on the lower animals, is the subject of *experimentation on the communicability of the disease* to these animals; a subject which, like the former, though of great importance as bearing on the natural history of cholera in man, has attracted comparatively little attention in this country. On this subject, however, my space forbids me to enter. Nor can I do more than merely allude to the influence of the atmospheric poison, during periods of epidemic cholera in man, on vegetation—to the *epidemic diseases of plants*, a subject to which many of the above remarks equally apply. The study of the epidemic diseases of plants ought to rank *pari passu* with that of epizootic diseases in the lower animals; these diseases are probably intimately connected, and a knowledge of the one class is calculated to throw light on the study of the other.—*Edinburgh Medical Journal*.

NIDUS OF THE FILARIA BRONCHIALIS.

(‘*Proceedings of the Pathological Society*,’ Tuesday, November 3, 1857).

Dr. RANKE exhibited the lungs of three sheep affected with a form of disease now very prevalent among those animals. The lungs were studded with a great number of gelatinous-looking bodies, mostly of a yellowish colour, varying in size from that of a mustard-seed to that of a bean. The smallest are generally roundish and almost transparent, sometimes they show an opaque white point in the centre,

* ‘*Medical Times and Gazette*,’ November 18 and 25, 1854.

and others are nearly black, resembling small shot. The larger ones are mostly irregular in outline, opaque, and of a dirty yellowish colour. Consistence varying, sometimes soft, sometimes almost cartilaginous, and occasionally hard and chalky. Pulmonary tissue between these bodies perfectly permeable to air. All these bodies contain the brood of a species of entozoon (*Strongylus Filaria*) in different stages of development. The large irregular bodies contain the old female worm and countless ova, and young worms in their earliest stage, mixed up with great quantities of cells resembling pus-corpuscles, compound granular cells, granular matter, &c.; while the small roundish bodies form a pseudo-cyst, and contain, coiled up in the same kind of exudation matter, one young worm attaining to maturity. The size of these solitary young worms greatly varies; the smallest are found in the semi-transparent bodies, and the largest, being nearly full grown, and having their genital organs developed, are found in the dark cysts. The exudation matter in the cysts seems to form the food of the young worm.

Dr. Ranke stated that he was not aware that any description of this development of the *Strongylus* existed, although the worm in its adult state, when it is found in the bronchi and trachea of the lungs of sheep, goats, calves, &c., has been long known. *Mr. Simonds*, Professor of Cattle Pathology at the Veterinary College, Camden Town, with whom *Dr. Ranke* had communicated on the subject, had, however, informed him that he himself had some time ago observed the ova and young worms in the larger patches. The disease seems to be just now exceedingly common; of eighteen lungs which *Dr. Ranke* examined, there were only two or three in a healthy state. As regards the effect of lungs so diseased being used for food, *Dr. Ranke* had made one experiment on a cat, but with a negative result. The animal was exclusively fed on such lungs for a fortnight, and then killed. It had shown no sign of disease during life, nor were any traces of the worms to be discovered either in the intestinal canal, or in any other organ. In the meat of sheep affected with the above-described disorder of the lungs, *Dr. Ranke* failed to discover the entozoon. *Dr. Ranke* afterwards showed some drawings and microscopic specimens of the worm in its different stages.

Mr. Spencer Wells read a note from Professor *Simonds*, to the effect that he had often met with the same disease in the lungs of animals. In the lungs of lambs it was very common to meet with nests of the ova and young of the *Filaria bronchialis*.

Dr. Leared suggested that the cretaceous deposits often found in the lungs of sheep might possibly be often derived from the cretaceous degeneration of these parasites.

After some further discussion, in which the President, *Dr. Watson*, *Dr. Ranke*, *Dr. Ogier Ward*, and *Mr. Hutchinson* took part, the subject dropped, the time of the Society being expired.—*Medical Times and Gazette*.

PARLIAMENTARY INTELLIGENCE.

EXTRACTS FROM MINUTES OF EVIDENCE OF THE "SELECT COMMITTEE ON THE SHEEP, &c., CONTAGIOUS DISEASES PREVENTION BILL."

(*Examination of Mr. J. B. Simonds, continued from p. 657.*)

134. Have you adopted vaccination?—We adopted vaccination for the prevention of the disease, and we found it was useless for such a purpose.

135. *Mr. Stafford*.—What is the Act to which you refer?—I think it is the 11th and 12th Victoria, chapter 107, mentioned in the preamble of the present Bill.

136. *Mr. Miles*.—Does the meat of animals, when first affected, become unfit for human food?—I should say decidedly so in this particular disease.

137. As far as the smallpox in sheep is concerned, do you think any fresh legislation is necessary?—I think that as far as smallpox is concerned, there is no absolute necessity to extend the present measure. There is no machinery, however, at present in operation by which we can ascertain the existence or the whereabouts of that disease.

138. What machinery do you think would effect that?—Similar to that which I have before referred to in speaking of pleuro-pneumonia, namely, returns to be made by farmers as to the state of health of their cattle.

139. *Sir John Shelley*.—What do you mean by the "whereabouts?"—I mean, supposing smallpox is raging in the county of Norfolk, we do not know that the disease exists there, and the consequence is, that many animals in whose system it is incubated, may be sent into fairs and markets, and spread the malady over the country; whereas if we did know the disease was there, precautions might be taken to prevent its extension.

140. *Mr. Miles*.—Was the loss originally very great from this disease in sheep?—It is one of the most fatal diseases

to which sheep are exposed; the loss has often amounted to 90 per cent.; and we can scarcely take it at less than 75 per cent. when the disease is allowed to take its natural course.

141. *Sir John Shelley.*—In what way do you propose to get returns from farmers?—That they should make returns to Boards of Guardians, and that these should be forwarded to the Board of Trade, or some other department of the government.

142. Would you make those returns periodical?—I would make them periodical as to the general state of the health of the animals on the farm, and I would call for special returns on the outbreak of a contagious disease.

143. Would you propose to inflict a penalty on farmers if they did not make returns in the event of their having disease in their flocks or herds?—I am inclined to think that farmers would make the return without the infliction of penalties.

144. *Mr. Miles.*—I understood you to say you did not think the Bill went far enough as to the description of the diseases. You mentioned eczema. Do you think that is so fatal a disease that it is necessary it should be placed in the Bill, and that any person who drove an animal to market affected with that disease should be subjected to a penalty of £20?—Eczema is not a fatal affection as a rule. It is a disease that produces great loss in condition, and there are some reasons that may be advanced for excluding eczema from the Bill.

145. Will you state what eczema is?—It is the disease commonly known under the name of the mouth and foot disease; one of those diseases that shows itself suddenly. There is no reason to believe that it is, like smallpox, incubated in the system; and consequently a herd of cattle might leave the premises of the farmer healthy, and become affected on the road to market.

146. Was that an imported disease?—No.

147. How long has it been prevalent?—It showed itself in 1839.

148. For the first time?—Yes.

149. *Lord Naas.*—Cattle scarcely ever die of that disease?—Rarely.

150. *Sir John Shelley.*—In your opinion, in regard to the foot disease, is it easily spread by cattle passing across ground where an affected animal has been?—I do not think there is sufficient proof of the disease being extended in that manner. It is a disease which, as a general rule, prevails as

an epidemic, and consequently all animals in a given district are more or less liable to become its subjects; but, like all other diseases of the same class, if the animals are made to undergo any exertion at that particular period of time, then they are more likely to become affected. I will give you an example. A man shall have 20 head of fat stock on his premises, which shall be in a fit state to go to market; he shall select ten out of them to send to the London market: the ten that are sent to the London market will, not unfrequently, become affected with the disease while on the road, and the other animals that remained at home will continue healthy.

151. You do not think that that disease is caught on the road?—No; I merely consider the animal itself is brought into a state favorable for the reception of the disease by the exertion it has undergone, and the altered circumstances under which it is placed.

152. *Mr. Miles.*—State your reason why you think that disease should be included in this clause?—For the same reason that pleuro-pneumonia should be included, namely, that although the disease assumes an epizootic form, it spreads likewise from contagion.

153. Is the meat of animals slaughtered while this disease is upon them unfit for human use?—I do not think it is.

154. *Mr. Gurdon.*—You were talking about the foot disease as an epidemic; do you not think that sheep are more liable to the foot disease in a rich wet pasture than on a firm dry land?—There are several diseases of the foot of sheep which are commonly considered to be identical; whereas it is known professionally that sheep are subject to an ordinary “foot-rot,” and are more particularly exposed to that disease when depastured on rich pasture ground in parks, and so on, particularly if the nature of the soil is clayey; the disease thus arising altogether from local causes, has many characteristics in common with the other disease of the foot, which is produced from special or particular causes, and consequently the two things are likely to be confounded together.

155. *Chairman.*—I think you recommended that farcy should be included among the diseases in the Bill?—Yes.

156. *Sir John Shelley.*—In your experience do you consider that the affection of the foot is inherited by the lamb?—I have known some cases.

157. I want to know with respect to this new disease, whether there have not been instances to a great extent of lambs and of ewes affected by the disorder inheriting the dis-

order?—It very frequently has been observed that the lambs of ewes which have either been recently affected, or are affected to some extent at the time they produce their young, have speedily become diseased, even when not more than two days old.

158. Would you impose a penalty on a man for fattening a lamb that has inherited the disease, although the meat is not in any way affected?—Oh, dear no.

159. I understood you to say that you would inflict a penalty on any person offering for sale sheep affected?—Under certain regulations; the Bill which should be prepared should deal with special diseases, and there should be special clauses to meet special affections; I do not really see how it is possible to name certain diseases and make a general legislation for them, when they are found to differ so much in their nature.

160. Then I want to ask whether this disease, which shows itself in the lamb very soon after it is born, you would bring under the penalties of the Bill?—No; I think such a lamb as that would be perfectly valueless to be disposed of.

161. Before it is fatted?—Before it is fatted the animal would have recovered: the effects of the disease will, however, continue, in so far as sheep are concerned, in their feet for a very indefinite length of time, but then very much of that will depend on the manner in which they are treated.

162. You are acquainted with the system of farming in Hertfordshire, where they produce fat lambs for the early Christmas market; I would ask you whether in that case you are aware they go on fattening lambs although they have that lameness in them?—They do so; but I would take the case of some ewes producing their lambs, and their lambs becoming affected while being treated in the ordinary manner; say, if you like, that there are twenty lambs which are thus affected; I think it more than probable that fifteen out of the twenty would perfectly have recovered in about a week or ten days, while five would remain lame, and those animals which remained lame would not be at all capable of propagating the disease; they would be enabled even to get fat under circumstances of that kind, because their lameness would not depend on the disease itself, but rather on the effects of the disease; fifteen out of the twenty would throw it off altogether, five would remain with some of its effects, but those effects might not be of any importance.

163. In your experience, have you not seen that the lambs, although affected, may be well to-day and re-affected to-morrow without any change of circumstances?—I have not seen cases of that kind.

164. And at any rate with regard to the driving of a lamb to market, although apparently when it left home it was well, would not the heating from the effect of driving to market be very likely to reproduce the lameness?—Yes, it would.

165. Would you in such a case as that inflict the penalty on the farmer?—Certainly not.

166. How would you discriminate between the man who knowingly sent a diseased animal to the market and a man whose animal may have recovered and fallen lame again on the road?—I have already explained as to this disease called eczema that a difficulty exists in including it in the general provisions of the Bill.

167. The foot lameness in sheep you would not include in the Bill?—No, not as simple foot lameness.

168. I suppose your view would be, that if you did include it in the Bill, it would have considerable effect on the production of meat in the London market?—Yes.

169. And therefore would be very much against the interest of the general consumer?—Just so.

170. *Mr. Colville*.—You stated that the meat of animals which were killed, having the mouth and foot disease, was not unwholesome food; can you tell us if the milk produced from those animals would be prejudicial?—During the time that the disease prevailed to a great extent, which was shortly after its introduction in 1839, there was scarcely a dairy in London that was not affected, and I believe there is no evidence of any individual having suffered from being supplied with the milk of the cows at that particular time.

171. *Chairman*.—Would you propose to include farcy among the disorders?—I propose to include farcy, simply because of its close relationship to glanders.

172. There is no doubt as to the infectious or contagious nature of farcy?—There is no doubt as to farcy being contagious; it is not an infectious disease in the ordinary acceptance of the term.

173. *Lord Naas*.—You stated there are several diseases popularly known as farcy, which do not come under the description of that which is professionally called farcy?—Yes.

174. Would you state the diseases popularly known as farcy, which are not true farcy?—A disease called œdema is not farcy, but an infusion of serum into the cellular tissue of one leg; that leg becomes an enlarged leg, and will probably, remain enlarged for many months. That is commonly called farcy, though it is of a different nature.

(*To be continued.*)

THE VETERINARIAN, DECEMBER 1, 1857.

Ne quid falsi dicere audeat, ne quid veri non audeat.

CICERO.

REMOVAL OF THE RESTRICTIONS CONNECTED WITH THE
CATTLE-PEST.

It is gratifying when duties are undertaken for the public good, for those who make the suggestions to find that they are acted upon, and the advantages they had pointed out are at length secured, however tardy the result may be in its accomplishment. As public journalists, we have long felt the importance of the freedom of our commerce in all which relates to the importation of cattle and cattle products, and as such are determined to labour for the removal of the restrictions under which they were laid, if no injury would result therefrom. Our readers need not to be reminded that we lately felt it a duty incumbent upon us to address a remonstrance to the Government with reference to its "Order in Council" forbidding the importations of skins, hides, bones, &c., for fear of the introduction of the rinderpest, although cattle themselves were allowed to be brought in. We are enabled now, however, to congratulate both them and the country in general, that the phantom which for a time blinded the understanding of our rulers has been dispelled, and that trade and commerce are once more free to pursue the even tenor of their way. At the Court at Windsor, held on the 4th of November, it was ordered by the Queen in Council "that all the prohibitions and restrictions now subsisting under the Order in Council of the twenty-seventh day of August, one thousand eight hundred and fifty-seven, on the importation or introduction into the United Kingdom from certain places in or upon the Gulf of Finland or the Baltic Sea, of such horns, hoofs, bones, and raw or wet hides or skins of cattle, hay, straw, fodder, litter, and manure as in the said last-mentioned order men-

tioned, shall, on and after the date of the present order, cease and determine."

The great value of this act of the Government does not, however, merely consist in allowing trade to be free, but in the assurance it gives to the country that no fear need any longer to be entertained that any new cattle-pest will invade our shores. In every respect the step taken is a wise one, and we trust that the day is far distant when circumstances will require that it should be retraced. The vigilance displayed by the several Continental states in watching the progress and in raising an insurmountable barrier against the extension of the cattle-pest into their territory, is our main, and, we may add, our most effectual security.

Without a complete disruption of the balance of power now existing in Continental Europe, we confess we apprehend no danger. Should the time unfortunately arise when the troops of Russia or of Austria leave their soil to invade Western Europe, then, indeed, it is more than probable that the horrors of war would be added to by the outbreak of a pest which will sweep away tens of thousands of our cattle. Why should all this not have been known before? Cannot England in the nineteenth century follow the example which has long been set her of having an authority to appeal to in matters of this kind? Must we wait until danger arrives, or is reported to be at our doors, before we commence inquiry? Missions may accomplish much, but to be of real value they must, if adopted, serve as precautions. Other means are open to us, equally as effective and far less costly. Why should not the Board of Health have a part of its inquiries directed to epizootics as well as to epidemics? Why, indeed, should it not have its Veterinary section? We have seen already the ill consequences of being uninformed and unprepared, and the same mistaken policy may lead again, without sufficient reason, to the exclusion of the food of the people.

THE AMERICAN VETERINARY ASSOCIATION,
PHILADELPHIA.

AMONG the works received by us from America, is one, the title of which is, 'Constitution and Bye-Laws of the American Veterinary Association,' Philadelphia, 1854.

On looking over it, we perceive that, in common with others, both on the Continent and Great Britain, we have been elected HONORARY MEMBERS of this scientific assemblage.

As the receipt of this pamphlet is the first intimation we have had of the honour conferred upon us, we beg thus publicly to express our acknowledgments.

We know not on what grounds, or by what authority, our American cousins become veterinary surgeons; but we suppose in that land of liberty and independence they scorn the trammels of any school. Among the names of its officers, we think we recognise one as "Corresponding Secretary," who graduated at the Royal Veterinary College, London, some years since; and we are glad to know that he still maintains a desire to promote the advancement of the profession by associating with others for that purpose.

It is in no spirit of captiousness or complaining that we make these observations, but contrariwise. There must be a beginning to all things, and if men of talent and education—for we perceive several M.D.'s among the patrons and officers of the new institution—deem our profession to merit their countenance and support, we hail it as an omen for good. We rejoice in the progress thus indicated, and readily hold out the right hand of fellowship, for our object is one.

We have often been at a loss to assign the reason why the veterinary art has not, ere this, obtained encouragement in America. Famous as that country is for her advancement in everything else, this seems to have been neglected by her. If horses there be of comparatively less value than in England, yet there are many philanthropists and econo-

mists among our cousins. The merciful man does not like to see an animal suffer, without endeavouring to afford relief, and the man of business will not court loss, however small it may be. Then there are such things as pets and favorites, all calling for a ministering to their wants and necessities at times and seasons: to do which is laudable.

That our readers may be made acquainted somewhat with the nature and intentions of this Association, we append its "Preamble," with its first and second "Article;" which will suffice to show the spirit that actuates the founders.

"PREAMBLE.

"Whereas, There has been no Association formed as yet among the VETERINARY PRACTITIONERS of the United States, for the defence of the rights and privileges of the Practitioners of this Art, or for the elevation of the standard of acquirements necessary for its successful pursuit; *and whereas*, Philadelphia is acknowledged, and appears, therefore, to be foremost in the cultivation of medical knowledge, and appears, therefore, to be an appropriate place for the establishment of an Institution designed to promote Veterinary Medicine, therefore,

"*Resolved*, That we, the undersigned, will, do, and hereby associate ourselves in a body, whose objects are as above stated, and do adopt for our organization and guidance the following Constitution and Bye-Laws:

"ARTICLE I.

"TITLE.

"This Association shall be known as "THE AMERICAN VETERINARY ASSOCIATION."

"ARTICLE II.

"OBJECTS.

"Its objects shall be the cultivation of fraternal feelings among Veterinary Practitioners; the elevation of the Veterinary Art (meaning thereby the treatment of the diseases of all domesticated animals) to an equal rank with other scientific branches of Medicine; the mutual improvement of its members, by the presentation of such cases of disease, together with their treatment and termination, that may come

under the notice of any gentleman belonging to the Association, which may be deemed of sufficient interest to bring before the Society; the establishment of a Museum of Anatomical and Pathological specimens; and the formation of a Library, consisting of such works as are necessary to elucidate and impart information on Veterinary Science; and in general, the defence of the rights, privileges, and immunities of the Veterinary Practitioners in the United States."

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL, HELD OCT. 21, 1857.

PRESENT:—The President, Messrs. Cheesman, Constant, Field, Goodwin, Jex, Jones, Stockley, Wilkinson, Withers, Professors Spooner, Simonds, and Morton, and the Secretary.

JAMES TURNER, Esq., the President, in the Chair.

Several donations from Mr. Bracy Clark, including the whole of his works, were laid on the table, when—

It was moved by *Mr. Jex*, and seconded by *Mr. Constant*, "That the thanks of the Council be given for the same." Carried.

A communication was read from Mr. Cowie, one of the members of the Board of Examiners for Scotland, announcing the proposed formation, by Mr. J. Gamgee, of a Veterinary School in Edinburgh, and requesting to know if the pupils thereof would be examined by the Board of the College. The Secretary was ordered to communicate to Mr. Cowie, in reply, "That the Council did not consider it within their province to interfere in the matter."

The result of the suggestions of the last meeting of the Council to the Board of Examiners was reported to be, that they had generally been acceded to: the exception was Mr. Lepper, who had been omitted to be informed that the travelling expenses of the country members would be offered them.

The Registrar's Report announced four deaths:

Edward John Parsons, of Tiverton, 1853.

Edmund George Chalwin, E.I.C.S., 1848.

Vincent Nelson, E.I.C.S., 1850; and

John Gillingham, of London, 1836.

It stated that an addendum to the list had been issued, containing the names passed up to the present time.

The Quarterly Balance Sheet was read, showing a balance in hand of £267 6s. 11d.; when—

It was moved by *Mr. Field*, and seconded by *Mr. Jex*, "That it be received and adopted." Carried unanimously.

Cheques were ordered to be drawn for £50 to the Secretary, and £28 4s. for current expenses.

By order of the Council,

E. N. GABRIEL, *Secretary*.

Veterinary Jurisprudence.

SHEFFIELD COUNTY COURT.

Action for Injury to a Horse.

HILL v. CHALLENGER.

THE plaintiff, Mr. Hill, of the Albion Corn Mills, Shemeld Croft, sought to recover £20 from the defendant, Mr. W. Challenger, blacksmith, Sheffield Park, for injury done to a horse.

Mr. Chambers appeared for the plaintiff, and Mr. Fretson for the defendant.

It appeared that on Wednesday, the 22d of April last, a horse for which Mr. Hill several years ago gave £32, was placed under the care of Mr. S. E. Turner, then of Sheffield, but now of Tickhill, veterinary surgeon, for canker in one of the fore feet.

Mr. Turner, in his evidence, sad that on the Thursday he gave the animal a six-drachm aloetic ball, and had it kept in the stable. It had warm mashes to eat, and poultices were applied to the foot. Between ten and eleven o'clock on the Saturday morning, he, Mr. Turner, went to the premises of Mr. Challenger, and asked him to meet him at the stable at eleven o'clock to put on the shoe and dress the horse's foot. He desired Mr. Challenger not to take the horse out of the stable, or do anything to the foot until he arrived, because he had been physicked. On reaching the stable, Mr. Turner found that Mr. Challenger had preceded him, had taken the horse out of the stable, placed him in a very exposed situation, without any rug or covering, and was paring the foot. He complained, and requested Mr. Challenger to take the horse into the stable, but the latter refused, saying he would take no harm. It was a very cold day, and

he put four sacks over the horse to keep him warm while the operation was finished, when he had him at once turned into the stable. Almost immediately afterwards the animal gave indications of being in pain, and during the evening he had it wrapped up and removed to his stables. His assistant remained up with it all night, and the best exertions were made to restore it, but the horse died at two o'clock p.m. on Sunday. He subsequently made a post-mortem examination, and found that death had resulted from inflammation of the bowels; in his opinion, the inflammation resulted from cold, consequent on the exposure of Saturday, and had no connection either with the canker or the grease from which the horse was suffering.

The only confirmatory evidence of importance was the statement of an old man employed by Mr. Hill, who said that he heard Mr. Turner complain very loudly of the horse having been exposed.

For the defence, it was first contended that the defendant was employed by Mr. Turner, and was therefore not responsible to Mr. Hill.

The Defendant, in his evidence, said he was employed by Mr. Turner, and expected a gratuity for his services, but received nothing beyond thanks, and inwardly he resolved not to be so "done" again. He denied having charged Mr. Hill or been paid by him for the job, but on a settled bill being put in by Mr. Chambers he admitted that it was there charged to Mr. Hill, and had been paid along with the remainder of the bill. In his further evidence, Mr. Challenger said he left Mr. Turner at five minutes to eleven o'clock to go to the stable; that Mr. Turner did not tell him that the horse had had physic, and was not to be brought out of the stable, but requested him to assist Mr. Hill's man to take off the bandage from the foot. This was all he had done besides washing the foot, when Mr. Turner arrived, and he (Mr. Turner) never made any complaint about the horse being brought out of the stable. He would not have put on the shoe and dressed the foot in the stable for the value of the mills.

Other evidence was adduced to show that the horse had suffered from canker three months, and from grease for a much longer period.

Mr. Cartledge, veterinary surgeon, after hearing the evidence, was of opinion that the death of the animal had resulted not from exposure, but from the combined effects of a somewhat large dose of physic and a too active dressing of the foot.

The Judge said he had no reasonable doubt that death had been caused by the defendant's negligence, whose evidence had been given in a way to inspire doubt of its accuracy.

Judgment for plaintiff for £10 10s., with an allowance of 15s. for advocate's fee and 50s. for witnesses.

APPOINTMENTS IN THE HON. E. I. CO.'S SERVICE.

Mr. H. Bath, M.R.C.V.S.

Mr. R. Moorhead, M.R.C.V.S.

OBITUARY.

Died, at Chelmsford, Essex, on November 1st, after a short illness, Mr. Samuel Baker, M.R.C.V.S., aged 60. Mr. Baker obtained his diploma April 29th, 1819, and was elected Vice-President of the Royal College of Veterinary Surgeons in 1852.

Also, at Bradford, Yorkshire, on the 11th November, Mr. R. Byron, M.R.C.V.S., aged 55. His diploma bears date Nov. 24th, 1825. Mr. Byron in early life practised with great success at Ashton and Oldham, in Lancashire, and was much respected by all who knew him, both for his professional ability and private worth.

Likewise, at 15, Cathedral Street, Glasgow, on the 1st November, from intermittent fever, John Maclean, M.R.C.V.S., aged 45 years. Our communicant states—"By his death the profession has lost one of its most respected members. Mr. Maclean obtained his diploma on the 25th April, 1837, and has since been actively engaged in practice. His gentlemanly bearing, straightforward, persevering energy, great intellectual powers and practical abilities, coupled with the kindest and most obliging disposition, soon gained him general confidence and regard in Glasgow and its neighbourhood, so that at his death he had one of the most extensive private practices in Scotland."

Since our last we have received another letter from Mr. S. W. Jeffery, V.S. 4th Bengal Cavalry, in which he says—"Poor Nelson, of the 10th Cavalry, had his brains knocked out by latties (sticks loaded with iron), by the Sepoys of his regiment." We trust these horrors are over.

INDEX.

A

- Abomasum, rupture of, in a cow, 24
Abscess near the acetabulum, case of, 434
Abscesses supervening influenza, case of, 328
Acarus, a new ore in the horse, 283
Acid, hydrocyanic, successful use of, in tetanus, 135
 uric, decomposition of, in the organism, 156
 lactic, the normal acid of the stomach, 158
 vegetable, action on calomel, 168
 sulphuric, obtained from gypsum, 445
Aconite, poisonous action of, 395
"Acteon" on the treatment of fistula, 442
Address, introductory, to Session 1857-8, 609, 669
Advice to masters and mistresses, 486
Age of animals, 239
Aged horses, American means of judging, 239
Agricultural Society of England, reports respecting the apprehended
 murrain, 271
 annual meeting of, 537
Agriculture in China, 362
Alcohol, action of, on the organism, 674
Alkaloids, vegetable, on the, 365
Allen, R., obituary of, 60
Allotrophy, effects of, on bodies, 619
Aloine, on, by T. B. Groves, 43
Aluminium, uses of, 88
Ammonium, iodide of, 333, 393
Amylene, on, as an anæsthetic, 307, 645
 experiments on, in France, 342, 645
Anæsthetic agents, on, 305
Anus, case of prolapsus of the, 71
Armatage, G., on purgatives and clysters, 438
Army appointments, 180, 304, 548, 666, 722
Arrow poison of the Indians, 406
Arsenic and antimony, mode of testing for, 454
Atmosphere, the properties of the, 223
Atrophine, its physiological action upon the retina, 102
Australia, state of veterinary medicine in, 315

B.

- Baker, Samuel, obituary of, 722
Barton, C. E., records a case of cerebral congestion in a horse, 63
Bauwens on the action of vegetable acids on calomel, 168
Beet-root, new manufactures from, 88

- Bernard, Claude, on the physiological action of the liver in the production of sugar, 576
- Bingley, Dr., on phosphorus as a poison, 402
- Blood-corpuscles, relation of, in size, 643
singular instance of boy drinking, 484
cause of coagulation of, 612
supposed case of air in the, 79
circulation of, how best seen, 445
- Botany, value and importance of, 620—623
proposed lectures on, 616—620
- Bovett, C., records a singular concretion met with in a cow, 646
- Bowels, inflammation of, resulting in vomica, 75
- Bowles, R., records a case of heart-disease, 427
- Braby, E., records a case of lesion of the sterno-maxillares muscles, causing an inability to masticate, 61
- Brain, larvæ in the, in a foal, 82
in spirits, the drunkard's, 176
- Bray, W. D., on vomica supervening enteritis, 75
records a case of ankylosis, 437
the formation of abscesses, &c, supervening influenza, 328
pulmonary apoplexy in a cow, 693
tumour on the coccyx, 436
- Broken-wind, how to "set," 267
shot an empirical remedy for, 485
- Brown, G., records a case of rupture of the septum auricularum in a cow, 506
- Brown, J., on the use of an escharotic powder for broken knees, 698
- Bursæ, enlarged, treatment of, by caustics, 644
- Byron, R., obituary of, 722

C.

- Calculi, cystic, in a dog, case of, 642
- Calculus, causing rupture of the rectum of a horse, 8
colon of a horse, 637
- Calves, cases of filariæ in the bronchial tubes of, 565
- Camel, case of glanders in a, 195
- Cancer of the stomach of a horse, 143
- Caries of the hip-joint, case of, 140
- Carless, J., junr., records a case of chronic diarrhœa, 321
- Carob-bean, the nutritive properties of, 206
- Castor oil, its advantages as a purgative, 558
- Castration of horses in India, on, 141
- Cattle trade and meat supply, 209
show in France, 229
singular cases of ophthalmia in, 554
cases of "sturdy" in, 80
disease, progress of, 157, 187, 224, 523
at Tripoli, 699
- Caustic, new, Professor Simpson's, 268
collodion as, 445
action and classification of, 450
treatment of bursæ with, 644
- Cavalry horses, disease of, in Poona, 90
- Challiner, W. J., records a case of rupture of the colon, 637
- Chalwin, E., obituary of, 668

- Cerebral congestion in sheep, instances of, 11
 a horse, leading to inflammation of the spinal cord, 63
- Chemistry, organic, discoveries in, 617
 practical, importance of, 617
 agricultural, value of, to veterinary surgeons, 623
- Chinese, the food of, 204
 medicine for hydrophobia, 333
 modes of fishing among, 487
- Chloroform, advantages of, in veterinary practice, 29
- Cholera, in the hog, 269
 amongst cattle and pigs, instances of, 400
 in the lower animals, on, 647, 703
 resemblance of murrain to, 252
- Cicuta virosa, variable action of, on cattle, 621
- Clinique and dissections, value of, 671
- Clysters, value of, in colic, 438
- Coleman, E., records case of cancer in the stomach, 143
- Colic treated by purgatives and clysters, 438
- Collodion, preparation of, for surgical purposes, 37
 as an escharotic, 445
- Colon, case of rupture of, by a calculus, 637
- Concretion, singular, in the ileum of a cow, 646
- Contagion and miasms, on, 284
- Contagious Diseases Bill, 466, 532, 583, 653, 710
- Contemporary progress of veterinary science, 31, 77, 149, 202
- Copper, mode of detecting, 304
- Coronary vein, case of rupture of, 265
- Couchman, T., records a case of worms in the kidney, 145
 tracheotomy in a steer, followed by accidental death, 146
- Council of the Royal College of Veterinary Surgeons, reports of, 50, 113, 292, 295, 412, 719
- Cow-keepers, the London, 376, 405
- Cox, W. G., records a case of open stifle-joint, 44
 laceration of the gastrocnemii muscles, 442
- Crimean campaign, by T. W. Mayer, 183;
 reminiscences, by "Poulain," 25
 reminiscences, by T. Paton, 195
 retrospects, by G. Fleming, 67
- Cuthbert, J., records cases of tetanus successfully treated with hydrocyanic acid, 135
- Cysticercus cellulosæ, the cause of "measled pork," 90
 on the development of, 93
 its transformation into tæniæ, 100

D.

- Dadd, Dr., review of 'The modern Horse Doctor,' by, 220
- Dairies of London, in relation to food, 376
- Dairy cattle, on the management of, 518, 572, 700
- Daubeny, Dr., on organic chemistry, 617
- Dawson, J., obituary of, 488
- Debaut, M., on amylene, 342
- Dentition, remarkable case of early, in a heifer, 509
- Desmarest, M., on the origin of nitre, 342

- Diabetic urine, how to determine the amount of sugar in, 652
 Diarrhœa, chronic and recurring, a case of, 321
 Dickens, C., records a case of rupture of the left kidney, associated with
 calcareous deposit, 181
 on the soundness and warranty of horses, 489
 in reply to Mr. Hawthorn, ditto, 688
 "Digg-a-moll," 392
 Diplomas, list of those to whom granted, 59
 Disease among cattle, progress of, 157, 187, 224, 523
 bill for prevention of, 466
 endemic, in America, arising from diseased milk and meat, 397
 Dodds, R., obituary of, 240
 Dog, case of rupture of the heart of a, 87
 Domesticated animals, French statistics of, 565
 Drought, the effects of a long-continued, at Moreton Bay, 115
 Dyer, H. W., records instances of cerebral congestion in sheep, 11
 case of open knee-joint, 12
 on glanders, and the authorities in the cities and towns of
 Ireland, 380
 on soundness and unsoundness, 632
 several cases of paralysis, 430
 ulceration of the integument, 12

E.

- Eastern campaign, "odds and ends" relating to, 183
 "the murrain," 251, 311
 East India Company, appointments by, 722
 Egg, impaction in the œsophagus of an, 559
 Electric current, the, and the relation between it and the nervous force,
 165
 Electricity and nervous force not identical, 611
 Ellis, J., his mode of treating sanderack, 425
 Emphysema, general, from a gunshot wound, 195
 Enteritis, treatment of, 644
 Ergot in wheat, 607
 Erysipelatous disease of the skin of horses, 552
 Extracts, fluid, how prepared, 367

F.

- Farcine, use of, in pulmonary diseases, 241
 Farcy, successfully treated with iodine and copper, 18
 Fat, cause of deposition of, 475
 Femoris, os, case of disease of, 323
 Ferrand, M., on caustics, 450
 Field, J., case of lithotomy, by, 65
 review of his essay on 'Purgatives,' 172
 Fishing in China, 487
 Fishwick, James, obituary of, 120
 Fistula, treatment of, 442, 558
 Fleming, G., Crimcan retrospects, by, 57

- Fleming, G., on ventilation on board ship, 192
 records a case of tracheal polypi, 385
 fistula of the parotid duct, 383
 Foal, successful removal of, after death of the mother, 383
 Food and disease, relations of, 280, 376, 397
 Forage for cattle, new kind of, 334
 Fracture of the navicular bone, 73
 French international exhibition, postponement of, 156
 cattle show, at Poissy, particulars of the, 229
 "Frost-bites" in horses, 69
 Furnivall, W., records a case of impactment of matters in the rectum, 137
 gangrene of uterus, 188
 inversion of the uterus, 435
 ruptured stomach, 139

G.

- Gabriel, E. N., proposed testimonial to, as secretary of the Royal College of Veterinary Surgeons, 348
 Gangee, Joseph S., his further inquiry into the reasons why the horse rarely vomits, 121
 his election as Surgeon to Queen's College, Birmingham, 699
 Gangee, J., his contemporary progress of veterinary science, 31, 77, 149, 202
 Garrod, Dr., his mode of determining the amount of sugar in diabetic urine, 652
 Gastrocnemii muscles, case of laceration of, 442
 Gastro-intestinal inflammation in a cow, case of, 134
 Gibbon, E. A., on the purgative effects of castor oil, 556
 on the treatment of fistula, 558
 on soundness and unsoundness, 689
 records a case of caries of the hip-joint, 140
 Gibton, R., on the state of veterinary medicine in Australia, 315
 Gillingham, J., obituary of, 668
 Glanderine, use of, in pulmonary diseases, 241
 Glanders, and the authorities of cities and towns in Ireland, 386
 contagious nature of, 654
 Continental regulations relating to, 508
 Glands, salivary, their secretions, 34
 Godbold, G., obituary of, 304
 Grease, cases of, in the Crimea, 71
 causes of, 476
 Greaves, T., on nasal gleet, 254, 371
 Green, C. S., on the treatment of parturient apoplexy, 208
 Greenhow, Dr. H., on the apprehended murrain, 277
 Gregory, T. D., on soundness and unsoundness, 12
 proposes the formation of a committee on the above, 635
 Glycerine, on, uses of, 3, 5
 tests for purity of, 5

H.

- Hæmoptysis, cases of, 74, 197
 Habits, influence of, 673
 Hair, use of, unknown, 474

- Hair, cause of development of, 475
Hall, J. B., records a case of farcy, 18
Hallen, J. H. B., testimonial to, 300
Hargrave, W., obituary of, 487
Harley, Dr., on the physiology of the motions of the iris, 102
Hawes, G., records a case of intestinal calculus, 8
Hawthorn, J., on the soundness and warranty of horses, a reply to Mr. Dickens, 549
Heart, case of rupture of, in a dog, 87
 disease of, with discharge from nostril, 427
 diseases of, in cattle, 153
 foreign body found in, 268
 rupture of one of the veins of, 265
 rupture of the septum auricularum in a cow, 506
 the existence of filariæ in the cavities of, 88
Hedgehog, its non-susceptibility to the action of poisons, 646
Hemlock, poisonous to pigs, 396
Hereditary influence, animal and human, 40
Hernia, case of ventral, in a heifer, 201
Hip-joint, case of caries of, in the horse, 140, 259, 323
Hog-cholera, the, an account of, 269
Holland, Dr. C., on the appendages to the animal creation, as hair, horn, tusks, and fat, 472
Hollaway, R. H., communication from, 433
 on erysipelatous disease of the skin, 552
 records a case of abscess, 434
Horns, causes of development of, 476
Horse, a 'loaded' one with shot, 485
"Horse-fair swindle," 117
Horse flesh, sale of, in Holstein, 510
Horse-flies, means of preventing the annoyance of, 548
Horsfall, T., on the management of dairy cattle, 518, 572
Hospital for quadrupeds and birds, useful to man, bequest to form, 332
Huke, W., obituary of, 304
Humoral pathology, a returning to, 610
Hurford, T., records a case of nasal polypus, 551
Huxley, Professor, his opinion on the nervous force, 611
Hydrophobia, Chinese medicine for, 333
 remedy for, 698

I.

- Ileum, case of rupture of, 265
Iodide of potassium, as a test for ozone, 37
 action of, 398
 ammonium, use of, 333, 393
 of starch, digestibility of, 651
Iodine, use of, in farcy, 18
Instruction, means of, to students, 669
Intestines, case of obstruction in, 494
Intoxication, derivation of the word, 176
Irish reminiscence, an, 266
Iron, sesquichloride of, in open joint, 12
Italian rye-grass, its value for fodder, 510

J.

Johnston, —, obituary of, 668

Jones, F. J. B., records a case of division of the sacro-ischiatic ligament of a cow, 20

Jutte, Dr., on the digestibility of the iodide of starch, 651

K.

Kent, J., communicates the history of two horses, supposed to have died from the administration of cold water while under the influence of purgative medicine, 629

his comments on *Greenland v. Hoskins*, 546

Kidney, softening and rupture of the left, with calcareous deposit in the right, 181

Bright's disease of, in the horse, 217

Knowledge, necessity of, at the present day, 677

"Knees, broken," remedy for, 698

L.

Lactic acid, the normal acid of the stomach, 158

Lameness, hip-joint, 140, 259

Larvæ, case of, in the brain of a foal, 82

Laycock, C., records a case of difficult parturition in a heifer, 505

Lead, antidote to compounds of, 158

detection of, 304

several cows poisoned by sugar of, 157

Leaders. Annual address of the editors, 51

Formation of a Veterinary Protection Society, 55

Cavalry College, 57

The cattle plague, 413

Prospects of the profession, 107

Inoculation for pleuro-pneumonia, 110

The reports of the Royal College of Veterinary Surgeons, 113

Our literature, 177

Contagious typhus in cattle, 224

The apprehended murrain, 287

The anniversary meeting of the profession, 290

The relations between food and disease, 346

The late annual meeting of the profession, 348

Election of James Turner, Esq., as president, 351

Proceedings in Parliament in reference to the diseases of cattle, 478

The annual meeting of the Royal Agricultural Society, 537

The cattle murrain of Ireland, and the Government proceedings with reference to rinderpest, 596

Opening of the scholastic session 1857-8, at the Royal Veterinary College, 658

Removal of the restrictions connected with the cattle pest, 715

The American Veterinary Association, 717

Lectures, value of, 669

Leeches, new method of applying, 89

Legislation burlesqued, 606

Lewis, G., records a case of accidental poisoning of a dog with *nux vomica*, 147

an operation for ventral hernia, 201

- Lchens, age of, 60
 Ligament, sacro-ischiatic, division of, in a case of difficult parturition in a cow, 20
 Lime, oxalate of, in the urine of the horse, 247
 Lindsay, Dr. L., on the influence of cholera on the lower animals, 647, 703
 Lithotomy, successful case of, 65
 Liver, the physiological action of, in the formation of sugar, 576
 London sausages, 212
 University of, bequest obtained by, 332
 Lonsdale, F. F., records a case of calculi in a terrier, 642

M.

- Macadam, Dr. S., on poisoning dogs with strychnia, 446
 Maclean, John, obituary of, 722
 Mange, cases of, in the Crimea, 264
 Manures, artificial, influence of, in the production of disease, 621
 Marasmus, cases of, in the Crimea, 263
 Marshall, W. J., on castration of horses in India, 141
 Marson, C., records a case of caries of the hip-joint, 323
 "Master Butterfly," his arrival in Australia, 239
 Mastication, inability to perform, from muscular lesion, 61
 Mather, G. J., on strongles within the arteries of colts, 190
 Matico, use of, in open joint, 12
 Maw, J. W., records a case of laceration of the vagina of a cow successfully treated, 511
 a case of rupture of the spleen, 695
 Mayer, T. W., "odds and ends" relating to the Eastern campaign, 183
 "the murrain," by, 251, 277, 311
 Mayhew, E., on the connection between the London cow-sheds and unwholesome food, 376
 M'Donald, W., records cases of cholera in cattle, 400
 Measled pork, microscopical examination of, *with an engraving*, 90
 not unwholesome, 336
 Meat, diseased, the characters and effects of, 334
 source of, 376
 Melanosis, case of, in a mare, 492
 Merrick, J., records a case of vomiting in the horse, 261
 paraplegia in the dog, 261
 Meyrick, J., records a case of rupture of the vagina during parturition, 503
 paralysis in a cow associated with fibrinous deposits, 504
 Microscope, value of, connected with medicine, 620
 Milk, as a manufacturing agent, 667
 composition of, at different periods of the day, 85
 diseased, productive of an endemic, 397
 London, 86, 378
 saline impregnation of, in animals, 84
 M'Kenna, W. C., obituary of, 488
 Moir, J., his contributions to veterinary science, 262
 Molyneux, R., obituary of, 364
 Morton, Professor, presentation of testimonial to, 296
 delivers the introductory address, 609, 669
 Morville, J., obituary of, 487
 Mules, Genoese, remarks upon, 262

- Müller on the structure of the retina, 100
 Murrain, on the, by T. W. Mayer, 251, 277, 311
 communication on, from Dr. H. Greenhow, 277
 Continental reports respecting, 271
 order in Council respecting, 270, 598
 order from Stockholm Chamber of Commerce respecting, 331
 Professor Renault's account of, 523
 progress of, 157, 187, 224, 523
 resolution of Royal Agricultural Society of England, respecting,
 277
 supposed existence in Ireland, 596
 Muscular current in relation to electricity, 165
 fibre stimulated by light, 333
 force, 165

N.

- Nasal gleet, case of, successfully treated, 16
 arising from natural causes, 372
 artificial causes of, 257
 thoughts on, by T. Greaves, 254 371
 Navicular bone, case of fracture of, 73
 Nelson, Vincent, obituary of, 668
 Nerves, physiology of those supplying the iris, 102
 Nervous force and electricity, not identical, 611
 Nitrate of silver, action and value of, in fistulous ducts, 390
 Nitre, memoir on the origin of, 342
 Noad on the muscular and nervous force, 165
 Nux vomica, accidental poisoning with, 147
 Nidus of the *Filaria Bronchialis*, 703

O.

- Obituary of Mr. R. Allen, 60
 S. Peech, 118
 G. Watts, jun., 120
 Herr Sticker, 120
 J. Fishwick, 120
 R. Dodds, 240
 W. Huke, 304
 G. Godbold, 304
 W. C. Sibbald, 364
 R. Molyneux, 364
 W. Hargrave, 487
 J. Morville, 487
 J. Phillips, 488, 668
 J. Dawson, 480, 668
 E. J. Shelford, 488
 W. C. M'Kenna, 488
 E. J. Parsons, 548
 E. Chalwin, 548, 668

- Obituary of Mr. J. Gillingham, 668
 — Johnston, 668
 V. Nelson, 668
 J. C. Quick, 668
 S. Baker, 722
 R. Byron, 722
 J. Maclean, 722
 Œdema of the head, singular cases, of 562
 Open joint, cases of, 12, 441
 treatment of, 644
 Ophthalmia in cattle, 554

P.

- Pancreatic secretion, characters of, 149, 202
 Paralysis, cases of, 430
 reflections on Mr. Small's cases of, 560, 562
 Paraplegia, case of, in a dog, successfully treated, 261
 singular cases of, 495, 560
 Parliament, discussion in, respecting the cattle disease, 231
 Parnell, C., on the treatment of enteritis, 644
 Parotid duct, fistula of, successfully treated, 388
 Parsons, E. J., records a case of nasal gleet, 16
 Parturient apoplexy, the treatment of, 208
 Parturition, case of, in a mare, where the colon became protruded, 383
 difficult case of, in a heifer, 505
 Patella, dislocation of, 23
 Peech, Samuel, obituary of, 118
 Pepsine, on, 337
 Percivall, C., records a case of dislocation of the patella, 23
 Pericarditis in cattle, cases of, 639
 Phillips, J., obituary of, 488
 Phosphorus as a poison, action of, 402
 Physic, the vagaries of, 580
 Physicians, the three, 485
 Pigs, human flesh eaten by, 39
 Plants, conditional state of, as productive of disease, 621
 Plates, explanation of, 22, 91
 Pleuro-pneumonia, inoculation for, 110, 207
 infectious nature of, 654, 656
 Poison of snakes, experiments on, 38
 urari or arrow, of the Indians, 406
 Poisoning, cases of, by strychnine, 89, 147
 by lead, 157
 Polypi, tracheal, instance of, 385
 Polypus, nasal, case of, 551
 Potassium, iodide of, as a test for ozone, 37
 an antidote to lead, 158
 action of, 398
 "Poulain" on diseases of the horses in the Crimea, 25
 Practitioner, a, on œdema of the head, 562
 records a case of general emphysema in a foal, 564

- Prolapsus ani, severe case of, 71
 Prowse, J., on the treatment of enlarged bursæ, 644
 Pulmonary apoplexy, case of, in a cow, 693
 Pupils, examination of, for diploma, 360
 Purgative mass, new formulæ for, 7
 agents, review of essay on, 172
 Purgatives, value of, in colic, 438
 death following exhibition of, 629

Q.

- Quick, J. C., obituary of, 668

R.

- Rainey, G., on the development of the cysticercus cellulosæ in the pig, 93
 Reading, importance of, 670
 Reasons why the horse so rarely vomits, further inquiry into, 121
 Rectum, case of excision of, in a mule, 71
 impaction of foreign matters in, 137
 Red cells, their relative numbers in the blood, 699
 Redwood, J., records a case of gastro-intestinal inflammation in a cow, 134
 Reeve, W. G., records an unusual case of strangles, 499
 on the use of sulphuric ether in tetanus, 503
 Reminiscence, an Irish, by "Acteon," 266
 Reminiscences, Crimean, by "Poulain," 25
 Report of the proceedings of the Council of the Royal College of Veterinary Surgeons for 1856-7, 352
 Retina, the structure of, in animals, 100
 Reviews of 'Essay on the therapeutical effect of purgatives on the horse,'
 172
 'The modern horse doctor,' 220
 'A register of experiments, anatomical, physiological, and pathological, on living animals,' 410
 'On the constitution of the animal creation, expressed in the structural appendages, hair, horn, &c.,' 472
 'The science and art of surgery,' by J. Erichsen, 588
 'The social and political relation of drunkenness,' by T. Laycock, 591
 Riecke, Dr., on the influence of measled pork in the production of tæniæ
 100
 "Rinderpest," the, account of, 413, 523
 Roads, the state of, in 1724, 116

S.

- Sagacity in brutes, new examples of, 424
 Salivary glands and their secretions, 34, 77
 Sanderack, mode of treatment of, 425
 Saponification, theory of, 2
 Sapphires obtained by a chemical process, 345

- Sarginson, T., records a case of uterine hæmorrhage in a cow, 329
 Science, advantages of, 610, 615
 Seaweeds, edible, 396
 Seeds, esculent, analyses of, 444
 Sewell, F. J., on hip-joint lameness, 259
 Sheep, method of obtaining a fixity of type in breeding, 512, 567
 lungs of, affected with filariæ, 708
 smallpox in, characters of, 656
 Shelford, E. J., obituary of, 488
 Shipley, W., records a case of removal of foal after death of the mother, 383
 Shoeing, Turkish, and other modes of, 25
 smith, junction not desirable with the veferinary surgeon, 613
 Shomburgk, Dr., on the urari poison, 406, 461
 Shuttleworth, Sir J. Kay, of the progress of medical science, 618
 Sibbald, W. C., obituary of, 364
 Siddall, J., memorial to the late, by the officers of the Horse Guards (Blue), 608
 Sieveking, Dr., on the action of iodide of potassium, 398
 Simonds, J. B., his evidence on the Contagious Diseases Prevention Bill, 466, 532, 583, 653, 710
 Simmel, J., records a case of ruptured abomasum, 24
 Simpson, Dr., his method of removing tumours, 156
 his new caustic, 268
 Skin, erysipelatous disease of, in horses, 552
 Smale, P., on the use of iodide of ammonium, 393
 treatment of open joint, 644
 Small, M., records some cases of paraplegia, as an epidemic among horses, 495
 Smith, Professor, his examination of "measled pork," 90
 Snakes, poison of, experiments with, 38
 Soumille, M., on the characters and effects of diseased meat, 335
 Soundness and warranty of horses, 12, 489, 549, 632, 635, 688, 689
 Spleen, case of rupture of, in a filly, 695
 Squire, W. S., on pepsine, 337
 Stable management of hacks and hunters, 170, 214
 Sticker, Herr, obituary of, 120
 Stomach, case of rupture of, 139, 494
 Storrer, J., on the cause and consequences of paralysis, in reply to Mr. Small, 560
 Strangles associated with glandular disease, case of, 492
 unusual case of, 499
 Strangulation of the intestines, 'gut-tie,' case of, 696
 Straw, the meal of, as an article of diet, 566
 Strongles within the arteries in colts, 190
 Strychnia, action of, on the animal economy, 48
 dog, 260
 Strychnia, cases of poisoning by, 89, 147, 446
 sensibility of the principal reagents, on, 449
 Students, general advice to, 626
 Sturdy in sheep, by J. M'Call, 267
 Sugar, grape, test for, 414
 Superstition, in connection with medicine, 393
 Sulphuric acid, obtained from gypsum, 445

T.

- Tait, J., his comments on Mr. Small's cases of paralysis, 562
 Taylor, F. B., records a case of death from the impaction of an egg in the œsophagus, 559
 T., on the poisonous properties of yew, 565
 Tea and coffee, effects of, 675
 Tendons, contractility of, 49
 Testimonial to Professor Morton, 296
 J. H. B. Hallen, 300
 Tetanus, cases of, successfully treated with hydrocyanic acid, 134
 the use of sulphuric ether in, 503
 Theory and practice, not antagonistic, 683
 Tobacco question, the, 216, 670
 Tombs, J., case of melanosis, by, 492
 records a singular case of glandular disease in a horse, 492
 case of obstruction in the intestines, 494
 case of rupture of the stomach, 494
 Tongue, singular accident to the, 198
 Tourdes, Professor, on amylene, 342
 Tracheal polypi, instance of, 385
 Tracheotomy performed in a steer, 146
 case of, 198
 Tuberculosis, case of, 196
 Tumour, new method of removing, 156
 on the coccyx of a cow, 436
 Turner, J., his election as president of the Royal College of Veterinary Surgeons, 351
 his opinion of the cause of the coagulation of the blood, 612
 review of his 'Experiments on living animals,' 410
 Typhus contagious in cattle, 157, 187, 224, 257, 270, 277, 278
 discussion in Parliament respecting, 231
 order in Council respecting, 270
 resolutions of the Agricultural Society of England respecting, 271

U.

- Ulceration of the common integument in sheep, 12
 Urari poison, action of, 45
 account of, 406, 461, 528
 Uric acid, decomposition of, in the organism, 156
 Urine, diabetic, mode of determining the amount of sugar in, 652
 Uterus, gangrene of, associated with acute pleurisy, 188
 inversion of, case of, 435
 laceration of, and hæmorrhage from, 329

V.

- Vagina, laceration of, and escape of colon during parturition in a mare, 383
 rupture of, 503
 Variola ovina, symptoms, &c., of, 656

- Varnell, G. W., Assistant-Professor, proposes the formation of a Veterinary Protection Society, 8
- Ventilation on board ship, 192
- Veterinary College, Royal, improvements in, 613
 division of studies in St. Bel's time, 624
 proposed addition to studies at, 616
 opening of scholastic session, 658
- Veterinary Jurisprudence. *Rubbins v. Great Northern Railway*, 234
 Berry v. Briscoe, 301, 391
 Benton v. Lawrance, 361
 Glover v. Swallow, 420
 Glover v. Great Northern Railway Company, 421
 Dun v. Great Northern Railway Company, 604
 Greenland, v. Haskins, 543
 Wright v. Denson, 601
 Simpson v. Saul, 605
 Fletcher v. Cook, 667
 Hill, v. Challener, 720
- Veterinary Medical Association, secretary's report of, for session 1856-7, 662
 meeting of council of, 665
 medicine in Switzerland, 37
 Morocco, 83
 Australia, 315
- Veterinary Surgeons, Royal College of, meetings of council, 59, 113, 292,
 295, 419, 483, 719
 annual meeting of, 352
 examinations at, 360
- Vine, V., records a case of 'gut-tie,' 696
- Vines, R., on the state of the profession, 368
- Vomiting, why so rare in the horse, 121
 in the horse, case of, 261

W.

- Warm bathing, on, 60
- Watson, H. H., on testing for antimony, 454
- Watts, G., jun., obituary of, 120
- Webb, H., records some cases of ophthalmia among cattle, 554
- Western, J., on the existence of oxalate of lime in the urine of the horse, 247
- "What's in a name," 609
- Wheat, the ergot of, 667
- Williams, W., records two cases of pericarditis in cattle, 639
- Wilkinson, Dr. J. J. G., on the case of glanderine and farcine, 241
- "W. L.," cases of poisoning of calves by yew leaves, 325
 on taking up the vein for bog-spavin, 327
- Worms causing rupture of the ileum, 265
 in the kidney of a colt, case of, 145
- Woorara, action of, on the animal economy, 45

Y.

- Yew, poisoning of bullocks by, 269
 calves by, 325
 mare by, 565
- Youth, the period of, the time for acquiring knowledge, 681





UNIVERSITY OF ILLINOIS-URBANA



3 0112 105804675